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Under Free

BOSTON UNIVERSITY

GRADUATE SCHOOL

Thesis

THE CHANGING INDUSTRIAL STRUCTURE OF NEW ENGLAND

by

Jessie ^{Ingram} Mary Pithie

(B. B. A., Boston University, 1938)

submitted in partial fulfilment of the

requirements for the degree of

Master of Arts

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1. The first part of the report is a general
2. introduction to the subject of the study.
3. The second part is a description of the
4. methods used in the study.
5. The third part is a description of the
6. results of the study.
7. The fourth part is a discussion of the
8. results of the study.
9. The fifth part is a conclusion of the
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THE CHANGING INDUSTRIAL STRUCTURE

of

NEW ENGLAND.

Introduction.

In New England, which occupies only 2 per cent of the land surface of the United States, was laid the foundation of American private enterprise. With a population of about 6.7 per cent of the population of the entire United States, it affords its people approximately 14 times the income of the average person in the rest of the world. (1) (2)

The story of New England industrial life is presented herewith in such a way as to give to the reader a fairly accurate picture of the various fields of activity within this region. No attempt has been made to go into the historical details of New England industrial life except in so far as is necessary to show the general trends of its business. Statistical information and numerous tables give a graphic account of what is actually happening in the respective fields of activity. The six States have been grouped as a whole and consideration has been given to the major industries within their borders.

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- (1) Dame, Lawrence, New England Comes Back, p.7
 (2) First National Bank, New England Trends, p.7

*What is basis
of this statement?*

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THE CHANGING INDUSTRIAL STRUCTURE

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In New England, which occupies only 3 per cent of the land surface of the United States, was laid the foundation of American private enterprise. With a population of about 6.7 per cent of the population of the entire United States, it affords its people approximately 14 times the income of the average person in the rest of the world. (1) (2)

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As indicated in the table of contents, Part I of this paper deals with the industries related to the region's natural products; its forestry, fisheries, agriculture, and minerals.

Part II is a somewhat more lengthy survey of its manufacturing industries. Since manufactures are the most important source of income for the people of New England, it is natural that more consideration should be given to manufacturing than to the less important activities.

The supremacy of New England manufactures in the early years of national growth was based on the production of fundamental needs, such as clothing and footwear. Hence, its outstanding leadership in the manufacture of textiles and shoes. Throughout the years, basic changes have taken place. People no longer are content with the primary needs of life. Consequently, there have grown up great new industries which supply our people with the comforts and luxuries they have come to demand.

During the past few years, New England has been passing through drastic adjustments. Marked improvement has been made since 1927 in the field of manufacture. It is the purpose of this paper to point out these adjustments, and to show the advances which have been made, and to acquaint

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In a letter to Mr. Ralph E. Flanders of Boston upon the occasion of his election to the presidency of the New England Council on November 14, 1940, President Roosevelt wrote as follows:

"To protect democracy against the forces of totalitarian despotism, our country is organizing its incomparable resources of men, materials, and machines. Our defense must be assured and it can best be assured by the united will of our citizens directed to that great purpose.

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There is no doubt that the belief in Washington is that here in New England our government can get the production required in good quality and with the least possible delay. Colonel H. K. Rutherford, Director of the Planning Branch of the Office of the United States War Department, said at the 59th Quarterly Meeting of the New England Council:

" War Department Procurement Planning officers have for twenty years been making an industrial inventory of New England.

Approximately 1500 of your largest and most efficient manufacturing plants have been earmarked as prospective candidates for munitions orders....But, I need not go into detail regarding the important place which New England holds in the industrial life of the nation. It will be sufficient for me to say that our industrial war plans visualize that munitions orders will be distributed as equitably as possible over the entire country. But we must, on the whole, take industry where it now exists.

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So we can say that New England will be called upon to contribute to the munitions production program in substantially the same proportion as it now contributes to the peace requirements of the nation as a whole.

"It has not been possible or advisable for the War Department to include in its industrial survey all the thousands of small plants which in the aggregate make up a considerable percentage of New England's industrial capacity. An important service which can be rendered to the cause of industrial preparedness is for those approved plants which have been earmarked for munitions production in an emergency, to organize these smaller plants into contributory sources of supply. To the extent that this may be practicable, it will bring existing capacity into full use, will distribute the load equitably and minimize the necessity for plant expansion, with perhaps unnecessary demands on the machine tool and other essential industries. The plants which the War Department has earmarked for munitions production

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FOREST RESOURCES

Much of the land surface of the New England States is forest land. When the colonists landed here, they found an abundant supply of timber to meet their many needs. They felled the trees, and used the timber for cabins, furniture, firewood, and implements of all kinds. Lumbering was a necessary part of their economic life.

As settlements grew, the demand for lumber grew, and with it came the exploitation of the timber resources. Owing to inadequate transportation, hundreds of lumber centers sprang up throughout this region to meet the local need of each new settlement. Numerous small saw mills were erected, the first of which was located in southern Maine as early as 1623.

Isaac Lippincott in his "Economic Development of the United States" says: "Lumbering in this section experienced many changes in the course of development. Referring to the period from 1713 to 1745, Weeden said: 'There are indications that the business of making lumber, sawing boards and shingles, so profitable in the seventeenth century, was now waning. In 1718, they found it better to export timber from Maine, rather than to saw it into boards. The best and most accessible trees in all the river valleys of our Colonies had fallen under the pioneer's axe. A product less bulky in transport, more valuable in kind than

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lumber, must be had from the remote districts now invaded by settling families.' In short, the three notable changes here were the growing tendency to export timber in the form of logs, the use of forests in the remote regions for the production of potash, and the exhaustion of the forests in the older regions." (1)

So the colonists continued to develop the lumber industry in response to the market demand at home and abroad. Timber was scarce in England so she early looked to the colonies for her supply, as did all of Europe and the West Indies. New England's export list included: masts, logs, planks, clapboards, staves, headings, tar, pitch, rosin, turpentine, and potash.

The important industry of shipbuilding developed during these early years as a natural consequence of the abundant lumber supply. By 1676, Massachusetts had a total of 730 vessels. In due time, many colonists were enticed to shift from agriculture to shipbuilding. England was in need to ships and was willing to pay high prices. By the opening of the Revolutionary War, one third of the English tonnage was American build. England found that the American ships were beginning to crowd out the English shipping in her home ports. About 50 ships were sold abroad annually. By this time, Massachusetts owned one sea

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(1) Lippincott, Isaac, Economic Development of U.S., p. 84

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(1) Hightower, "Massachusetts Development of U.S., p. 24

going vessel for every 100 inhabitants. (1) Shipbuilding became the leading industry of New England, and by the early part of the 18th Century her sailing vessels were known as the finest in the world.

Shifting Source

New England held first place as a source of timber for many years; but with the opening of the west with its demand for lumber, the forests of the north central section, the south, and the far northwest were increasingly drawn upon to supply the needs.

Meanwhile, the exploitation of New England timber has passed through various stages. The virgin pine was practically all gone by 1870. In recent years, the production of spruce and fir has fallen off; likewise, the production of hard wood lumber. The peak of production in New England was reached in 1907, when it amounted to 3,170 million board feet.

(2) At the present time, New England produces less than half of the amount of lumber which this region consumes.

The wood-using industries scattered throughout northern New England depend upon the continued maintenance of adequate forest materials close by. They already tend to shift slowly and reluctantly to new locations. The paper and pulp industries comprise more than half the total of all the wood-using industries of New England. Some of the others are the manufacture of furniture, packing boxes, planing-mill products, toys, and turned and carved wood products.

(1) Faulkner, Harold, Am. Economic History, p. 242
(2) Artman, Chas., op. cit., p. 52

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(1) *Journal of the American Statistical Association*, Vol. 24, No. 136, 1929, p. 144.
(2) *Forest and Stream*, Vol. 10, No. 1, 1907, p. 1.

General Trends

Since the Civil War New England has been increasingly concerned about her forest yield. More attention has been given to the care of forests in this section of the country than in any other. Protection against fire hazards, measures for the control of disease and insects, acquisition of forest tracts by public agencies, and efforts toward reforestation are the main objectives.

A large proportion of New England forest land is now covered with growing timber which has not yet reached the cutting stage. There is considerable natural reproduction of spruce, fir, and white pine. In addition, nearly 80,000 acres have been planted to forest by private agencies. These include white pine, Norway pine, and spruce.

Forestry departments with foresters are maintained in each of the New England States, and several other agencies are doing much to promote constructive forestry. The United States Government maintains the Northeastern Forest Experiment Station at Amherst, Mass., whose field includes New England and New York. The Harvard Forest at Petersham, Mass., is given to the study and application of practical forestry methods in New England. Schools of forestry are maintained also at Yale University, at the University of Maine, and at the University of New Hampshire. (1)

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(1) Artman, Charles E., op. cit., p. 54

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put into operation steps for the further conservation of forests within their borders. (1)

Maine: The State Forest Commissioner has met with spruce land owners, pulpwood operators and manufacturers to consider self-regulation with possible state and federal co-operation. A similar meeting is scheduled with pine and hardwood owners. The University of Maine plans to organize a committee to study forestry policy needs, with a view to introducing necessary legislation in two years. The extension service of the Northeastern Forest Experiment Station is sponsoring research in uses for hardwood and waste materials.

New Hampshire: Bills have been submitted to the state legislature determining financial adjustments necessary if timber is removed from the tax list, creating district forestry advisory boards, and redrafting the soil conservation law; a plan whereby the Secretary of Agriculture may extend the federal forest survey to New Hampshire is also proposed. The Governor and Council may appoint an interim forest research committee to study the problem of private forest management. A new survey of forest resources is planned.

Massachusetts: Two bills are pending on forest taxation and forest regulation or supervision. Governor
(1) New England Council, News Letter, Feb., 1941, p. 2

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(1) New England Council, News Letter, Feb., 1941, p. 2

Saltonstall has appointed a Special Committee on Forestry to study rehabilitation of hurricane-swept areas, forest taxation, marketing of forest products, market service to woodland owners and wood-using industries, and the development of profitable forests on public and private lands. The New England Council's Policy for New England is being used as a basis of action by the Massachusetts Committee on Rural Policy.

Rhode Island: The Office of Forests and Parks has made aerial photographs of the entire state to show location and kinds of woodland areas, has inaugurated a new fire prevention plan, encouraged private reforestation, and started a marketing program for low grade forest products.

Connecticut: Some form of state control over private cuttings is sought in a bill before the legislature, as well as permission to organize soil conservation advisory districts. A research program on use of local hardwoods is also under consideration.

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LUMBER PRODUCTION

(In millions of Feet)

	1889	1899	1909	1919	1929	1935	1938
Maine	597	785	1112	596	258	750	218
New Hampshire	277	572	650	339	192	217	135
Vermont	384	376	352	218	120	127	92
Massachusetts	212	344	361	167	72	73	54
Connecticut	49	108	168	87	30	56	10
Rhode Island	8	19	25	11	7	8	3

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Statistical Abstract of the United States, 1940. p.746

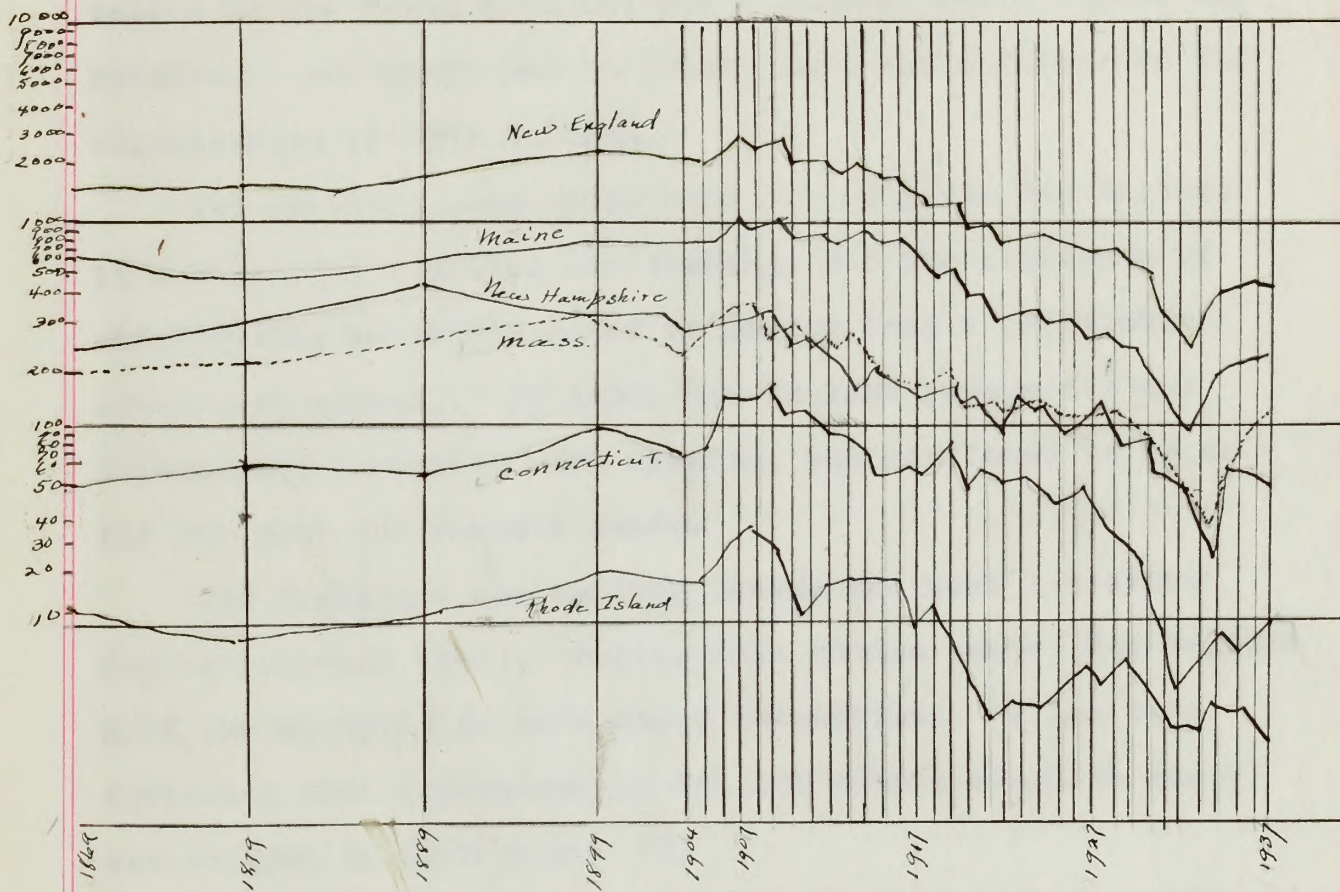
LUMBER PRODUCTION

(In millions of feet)

	1889	1899	1909	1919	1929	1939
Maine	297	785	1112	595	328	730
New Hampshire	277	572	880	329	192	217
Vermont	264	378	322	249	120	127
Massachusetts	212	244	381	167	72	73
Connecticut	49	108	183	87	20	26
Rhode Island	8	19	25	11	7	8

LUMBER PRODUCTION

(In millions of feet)



FISHERIES

Fisheries were not only the earliest form of industry in colonial New England, but also the most profitable. In fact, English fishermen had been sailing regularly to the waters of the North Atlantic for a hundred years before any settlement was made, and on doubt, this was a factor in the colonization of this section.

The settlers soon found that not only was New England in a strategic position for fishing, but the abundance of shipbuilding materials aided in making this a profitable commercial pursuit. By 1650, New England prosperity was inseparably connected with fishing, and continued to be so for the next two hundred years.

Cod fisheries and whaling became the most lucrative during colonial times. During this entire period New England held the monopoly in both these industries. It has been estimated that approximately 255,000 pounds (English money) was brought in each year. (1)

The cod fisheries developed first, and were so profitable that in 1641 some 300,000 Cod were sent abroad. (2) By the year 1675, over 600 vessels employing 4000 men were engaged in this business. (3)

Whaling began about 1700, and within two decades employed 260 vessels. Within the next fifty years this number had

.....
 (1) Bogart, Ernest, Economic History of United States., p. 53

(2) Faulkner, Harold U., Am. Economic History, p. 86

(3) Ibid. p. 86

increased to over three hundred vessels with more than four thousand seamen employed. (1) Whaling brought in larger type vessels and longer voyages, and the most skillful whalers in the world were found in New England. Finally, the whales deserted the Atlantic coast, and after fifty years of prosperity, the whaling industry shifted to the Arctic and Antarctic waters. By 1908, whaling was no longer an industry of New England.

During these early years of pioneer fishing, the General Court of Massachusetts passed laws for the protection and development of the business, and the relation between ship owners and sailors. All vessels and stock were exempt from all charges for seven years, and the ship carpenters, millers, and fishermen were excused from military training during the fishing season. (2) In writing of the organization of the colonial fishing, Weeden says that the value of the catch was divided equally between the capitalists who owned and fitted the boats, and the crew. In the eighteenth century this was changed to a one-fifth share for the capitalists and the remaining four-fifths for the seamen. This basis of sharing lasted until near our own time.

Expansion of Fisheries

One of the results of the westward movement was to open up new resources and to distribute the fishing industry throughout the country. The Pacific Coast fisheries with its salmon and halibut now rank first in the country. New England

(1) Faulkner, Harold, Am. Economic History, p. 88
 (2) Lippincott, Isaac, op. cit. p. 84

is able to claim second place. The Boston Fish Pier with its vast storage and shipping facilities is still the largest in the world. This section produces 91 per cent of the total United States Cod catch, practically all of the haddock, 98 per cent of the swordfish, 87 per cent of the lobster, not to mention the other important sea foods produced here. (1)

South Boston is not the center of the deep-sea fresh-fish industry. Cape Cod specializes in shell fish. The shallow waters around Nantucket produce flounders, and the waters of Martha's Vineyard yield oyster. Gloucester is the center of the salt-fish industry and is also important as a center for canning deep-sea fish. Very recently it has begun the distribution of fresh and frozen fillets. Maine is noted for its herring--canned, smoked, and pickled--and for its lobster.

General Trends and Prospects

Although New England's fishing activities are relatively less important than formerly, there are at present 20,248 men engaged in this work, according to the 1938 census. Moreover, there are now being used 665 fishing vessels and 9000 fishing boats. The total catch for 1938 amounted to over 631,520,000 pounds and was valued at approximately \$18,275,200. (2) This compares quite favorably with the average during the past fifty years which fluctuated between 400,000,000 and 700,000,000 pounds. The highest point was reached in 1930. (3)

(1) Artman, Charles. op. cit., p. 66

(2) Statistical Abstract of U. S., 1940. p. 753

(3) First National Bank, New England Trends. p. 22

Because of the extensive fishing grounds of the Atlantic coast, there is reason to hope they will maintain their relatively high level of productiveness. This is not so true of the inshore fisheries which may be destroyed by stream pollution. Salmon, for instance, which used to abound in New England are now practically extinct with the exception of a few hundreds taken in some rivers of Maine.

There has not been sufficient care on the part of the States for the preservation of commercial fisheries. More attention has been given to fresh water and sports fisheries. due to the close association of the fish and game laws. For this reason there has been exploitation of some fish, and no scientific study has been made for their preservation. The United States Bureau of Fisheries in Cambridge is doing some research work now, but this must be supplemented by work on the part of the States. In January of this year (1941) five of the States participated in the Fourth Eastern States Conservation Conference held in Boston. A draft of a proposed interstate compact to improve fishery usage and form a protective commission was drawn up. It was agreed to submit to the legislature of each Atlantic coastal State an enabling act permitting it to enter into a compact "to promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard and to create the Atlantic States Fisheries Commission." (1) When this proposal

.....
 (1) New England Council. News Letter, February, 1941. p.2

goes into operation, it will then be possible for scientific observation to detect early stages of depletion and to apply such measures and restrictions as may be necessary to prevent irreparable damage. The future of New England fisheries depends upon its future regulation policy.

Year	Value	Value
1930	12407.3	12407.3
1931	12407.3	12407.3
1932	12407.3	12407.3
1933	12407.3	12407.3
1934	12407.3	12407.3
1935	12407.3	12407.3
1936	12407.3	12407.3
1937	12407.3	12407.3
1938	12407.3	12407.3

Maine

Year	Value	Value
1930	2742.4	2742.4
1931	2742.4	2742.4
1932	2742.4	2742.4
1933	2742.4	2742.4
1934	2742.4	2742.4
1935	2742.4	2742.4
1936	2742.4	2742.4
1937	2742.4	2742.4
1938	2742.4	2742.4

New England

Year	Value	Value
1930	170.8	170.8
1931	170.8	170.8
1932	170.8	170.8
1933	170.8	170.8
1934	170.8	170.8
1935	170.8	170.8
1936	170.8	170.8
1937	170.8	170.8
1938	170.8	170.8

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FISHERY QUANTITY AND VALUE

1880--1938

New England

Year	Quantity (1000 lbs)	Value (1000 dollars)
1880	-----	12503.0
1902	534075	12406.3
1908	530029	15139.0
1919	467340	19838.7
1929	694286	29072.5
1930	701351	27493.5
1932	480521	14001.3
1933	499936	13488.6
1935	655430	17983.6
1937	670864	19937.3
1938	631520	18275.2

Maine

1880	-----	2742.6
1902	242390	2918.8
1908	173843	3257.0
1919	147956	3889.0
1929	162939	4897.2
1930	143824	4329.4
1932	90602	2411.3
1933	98498	2307.1
1935	112219	3309.2
1937	101179	2806.0
1938	67207	2520.9

New Hampshire

1880	-----	170.6
1902	1593	50.0
1908	677	53.0
1919	529	92.7
1929	378	52.1
1930	1069	69.1
1932	744	57.7
1933	542	57.1
1935	354	61.6
1937	664	93.0
1938	996	109.1

FISHERY QUANTITY AND VALUE , concluded

1880--1938

Massachusetts

Year	Quantity (1000 lbs)	Value (1000 dollars)
1880	-----	7959.8
1902	230646	6482.4
1908	244313	7095.0
1919	246951	10859.7
1929	447689	18052.5
1930	442474	16289.1
1932	347593	8928.3
1933	373670	9507.0
1935	503417	12147.9
1937	534990	14197.5
1938	537851	13167.4

Rhode Island

1880	-----	12503.0
1902	534075	12406.3
1908	530029	15139.0
1919	467340	19838.7
1929	694286	29072.5
1930	701351	27493.5
1932	480521	14001.3
1933	499936	13485.6
1935	655430	17983.6
1937	670864	19937.3
1938	631520	18275.2

Connecticut

1880	-----	933.2
1902	37832	1799.4
1908	66942	2982.0
1919	23654	1700.6
1929	54979	3635.4
1930	88012	4518.6
1932	21046	1110.6
1933	9878	613.1
1935	14916	1217.0
1937	16063	1439.8
1938	11839	1420.2

From Statistical Abstract of the United States, 1940. p. 751

Year	Quantity (1000 lbs)	Value (1000 dollars)
1938	11839	1420.2
1937	18082	1420.8
1936	14918	1217.0
1935	9978	612.1
1934	21045	1110.6
1933	82012	4618.6
1932	54979	2835.4
1931	23654	1700.6
1930	66942	2982.0
1929	27832	1733.4
1928	932.2	932.2
1927	67084	19937.3
1926	655430	17982.6
1925	499936	12482.6
1924	480321	14001.2
1923	701321	27492.2
1922	664286	22072.2
1921	467240	19832.7
1920	220029	12132.0
1919	524072	12402.2
1918	-----	12502.0
1938	227821	12127.4
1937	224920	14127.2
1936	202417	12147.2
1935	272270	9297.0
1934	247292	8222.2
1933	442474	12222.1
1932	447829	12022.2
1931	246921	10822.7
1930	244212	7092.0
1929	220642	6422.4
1928	-----	7922.8

Massachusetts

Rhode Island

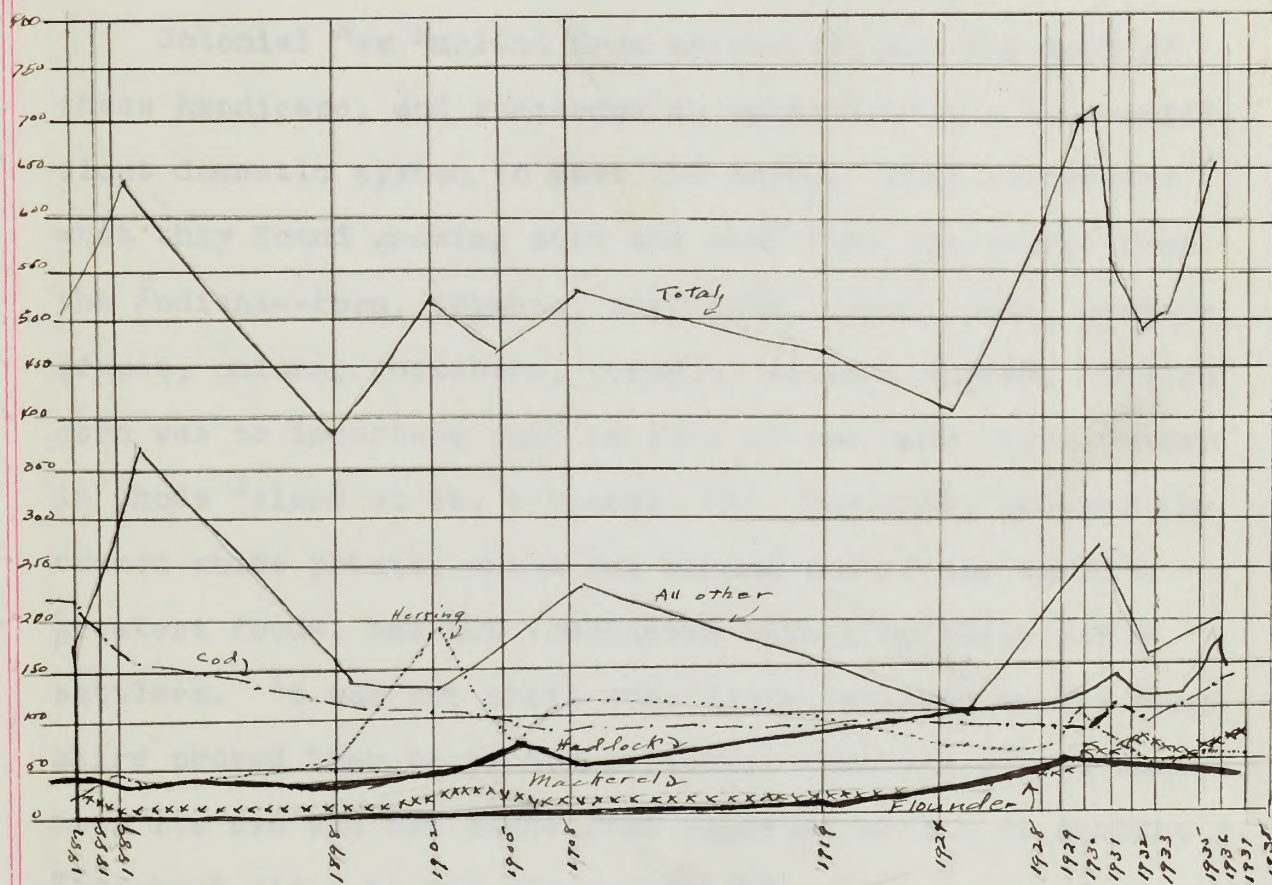
Connecticut

FISHERY QUANTITY AND VALUE, continued

1880--1938

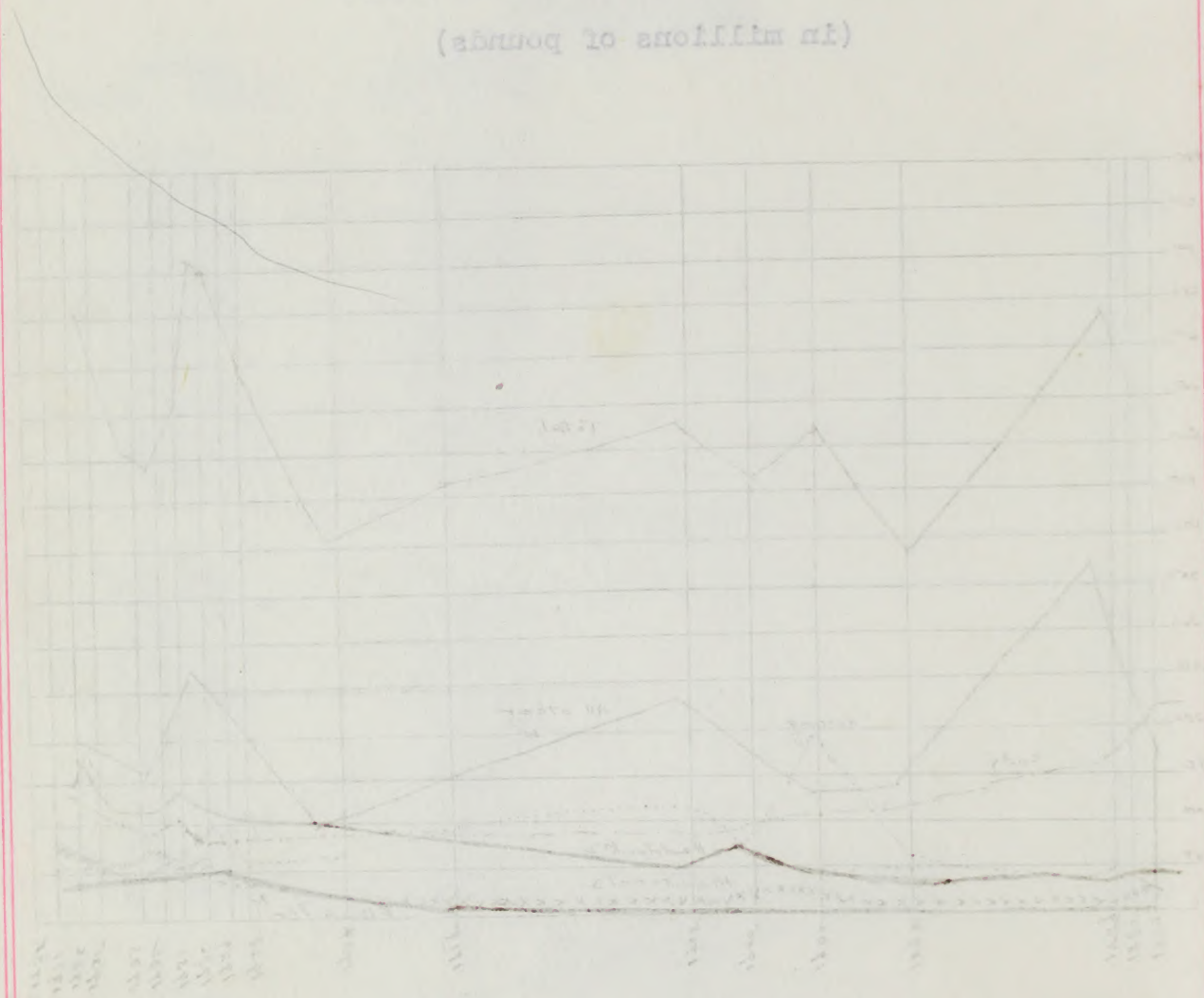
NEW ENGLAND FISHERIES

Total Catch of Fish--Selected Years
(in millions of pounds)



NEW ENGLAND FISHERIES

Total Catch of Fish--Selected Years
(in millions of pounds)



AGRICULTURE

New England agriculture is important primarily as a source of supply for the needs of its own population. This region has never been regarded as an agricultural locality, owing to its rigorous climate and sterile soil.

Colonial New England from necessity made the most of these handicaps, and succeeded in establishing a self-sufficient domestic system to meet its needs. They cultivated what they found growing wild and what they discovered from the Indians--corn, tobacco, artichoke, beans, peas, peppers, grapes, onions, cucumbers, pumpkin, squash, apples. Indian corn was so important that in 1641 it was made legal tender in Rhode Island at 4s. a bushel. (1) Curiously enough, the common white potato, which has become one of the world's greatest foods, was not considered edible by these early settlers. It was not until some Irish settlers in New Hampshire proved them to be non-poisonous that the potato came into its own and has since been regarded as one of America's "greatest gifts to the old world." (2)

Thus, the New England farmer in colonial days obtained his living from grains, fruits, meats, dairy products, flax and wool, honey and maple sap. His tools were of the crudest and his methods most wasteful.

.....
 (1) Lippincott, Isaac, Economic Development of the U. S. p. 60
 (2) Faulknew, Harold U., Economic History, p. 58

Pioneer Agriculture

Little progress had been made in agriculture up to the close of the Revolutionary War; but from that time to the close of the Civil War, New England farming went through a veritable revolution.

During these years, the westward movement had begun and pioneer farming developed. The opening of these vast fertile lands had a demoralizing effect upon the eastern farmer. After the opening of the canals and the development of the railroads, New England could no longer compete with the west in the production of grain and meat. Therefore, this section turned exclusively to dairying, truck farming and fruit raising.

Meanwhile, the Industrial Revolution was slowly but surely transforming New England into a manufacturing center. By 1860, approximately one third of the people in southern New England were engaged in manufacturing. This opened a new market for the agricultural products of the farms. Moreover, labor-saving machinery and scientific methods were being introduced to stimulate greater interest in agriculture. Farming became more and more specialized as the self-sufficient domestic system broke down before the ever growing factory system. The year 1880 found the greatest farm activity in New England. The census of that year gives a total of nearly 21,500,000 acres under cultivation.

The total cash income from crops and livestock, including government payments, received by New England farmers in 1938 was only \$227,000,000 or less than 3 per cent of the aggregate farm income of the country. (1) The Farmers supplement this income by seasonal factory work, fishing, tourist business, and other pursuits. This inability of the New England farmer to compete with the rest of the country is due, not only to the harsh climate and less fertile soil, but also to the competition with extensive manufacturing industries of the east for the labor supply. This results in an average of 55 per cent higher wages for this section than for the rest of the country. This higher labor cost tends to retard farming in the New England States.

Trends in Specialization

Dairying is the most important agricultural activity in this section today. The total value of milk production here was estimated by the New England Crop Reporting Service to be more than \$108,000,000 and its volume approximately 468,103,000 gallons.

In former years most of the milk was made into butter and cheese, but today most of the milk is marketed in its fresh state. Less than 20 per cent is made into butter and probably not more than 2 per cent is made into condensed milk and cheese. (2)

Second in money income to the farmer of New England is the production of potatoes. The April, 1941, News Letter

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 (1) First Nat'l. Bank, New England Trends. p. 24
 (2) Artman, Charles E., Industrial Structure of N.E., p. 21

The total cash income from crops and livestock, including government payments, received by New England farmers in 1933 was only \$287,000, or less than 3 per cent of the aggregate farm income of the country. (1) The farmers supplied most of this income by seasonal factory work, fishing, tourism, business, and other pursuits. This inability of the New England farmer to compete with the rest of the country is due, not only to the harsh climate and less fertile soil, but also to the competition with extensive manufacturing industries of the east for the labor supply. This results in an average of 55 per cent higher wages for this section than for the rest of the country. This higher labor cost tends to retard farming in the New England States.

Trends in Specialization

Dairying is the most important agricultural activity in this section today. The total value of milk production here was estimated by the New England Crop Reporting Service to be more than \$108,000,000 and its volume approximately 228,100,000 gallons.

In former years most of the milk was made into butter and cheese, but today most of the milk is marketed in its fresh state. Less than 30 per cent is made into butter and probably not more than 5 per cent is made into condensed milk and cheese. (2)

Second in money income to the farmer of New England is the production of potatoes. The April, 1934, News Letter (1) gives the following figures for New England trends in 1934: (2) Arman, Charles H., Industrial Structure of N.E., p. 21

of the New England Council indicates that the 1941 crop of potatoes will be less than that of 1940, according to a survey made by the United States Department of Agriculture. (1) The 1940 crop exceeded the 1939 by 25 million bushels. (2) The climate and soil of northeastern Maine makes this one of the greatest potato producing areas of the country, although potatoes are grown in all farming districts of New England. Ordinarily, New England contributes more than one-tenth of the total potato-yield of the United States. (3)

Apple growing is another specialized industry in Maine, New Hampshire, Vermont, and Massachusetts. There has been no great increase in the total apple production here since 1890. The interesting feature to note is that while the older orchards are rapidly passing out of commercial production, the development of orchards from new plantings are rapidly increasing to take their place.

Maple products made from the sap of New England's maple trees rank fourth in the individual sources of farm income. Vermont produces nearly 75 per cent of the entire yield. Its relative importance as the leading State in this industry has increased in recent years. At present

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- (1) N.E. Council. New England News Letter, April, 1941, p.7
- (2) Statistical Abstract of U. S. 1940
- (3) Artman, Charles E., op. cit., p. 35

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 (1) N.E. Council, New England News Letter, April, 1941, p. 7
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 (3) Arman, Charles E., op. cit., p. 35

Vermont produces on the average 30 per cent of the country's Maple crop. (1)

Another crop specialty of New England rural life is tobacco. Its production is confined to a small area of the Connecticut River Valley. As early as 1859 this region produced upward of 9,000,000 pounds of tobacco, and by 1879 had increased to nearly 20,000,000 pounds. From 1910 to 1920 the production increased materially. During the last decade the crop has averaged about 50,000,000 pounds, with sharp fluctuations from year to year. (2)

Cranberries are produced in the peaty bogs of the Cape Cod district. They require a cool climate, supplies of sand for surfacing, and facilities for flooding the plants during the winter. These conditions are present in southeastern Massachusetts, Nantucket, and Marthas Vineyard. This district produces about 60 per cent of the total cranberry crop in the United States. The present tendency is toward the improvement of old bogs and the planting of new ones. The cost of planting and installing equipment for flooding often runs as high as \$750 or more per acre.

In southeastern Maine, the marketing of blueberries is a most important activity. It has been estimated that the people of this region receive an income of approximately one million dollars a year from this crop. Many families

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(1) N. E. Council. New England News Letter, April, 1941, p.7
(2) Artman, Charles E., op. cit., p. 43.

depend upon the harvest of blueberries for their year's income. At present experiments in the culture of improved varieties are in progress on Cape Cod.

Sweet corn for canning has become another specialized crop of Maine. Although grown elsewhere in New England, Maine produces about 80 per cent of the total, which in 1925 was valued at \$1,539,000.

Miscellaneous crops yielding substantial incomes include market-garden crops of southern New England, poultry raising in southern New England, and in regions not given to crop specialization, hay is usually important.

1900	287,469	191,898	6,134,405
1910	300,759	136,602	7,254,806
1920	322,163	156,564	8,114,601
1925	327,755	155,489	8,595,147
1935		159,243	

* includes total population

INCREASE IN VALUE OF FARM PROPERTY IN NEW ENGLAND, 1880-1935

	All farm property	Value of lands & buildings
1880	435,154,325	279,240,543
1890	560,467,417	476,835,837
1900	668,368,932	480,133,979
1910	671,610,356	500,661,418
1920	525,267,617	439,870,275
1930	438,546,900	328,267,740
1935	367,348,487	215,244,808
1935	1,173,019,364	817,235,564

By 1935 Farm Property had decreased as follows:

1,166,353,000 931,271,000

CHANGES IN NEW ENGLAND FARM ACREAGE, 1880-1925-1935

State	1880	1925	1935
Maine	6,552,578	5,161,428	4,722,000
Vermont	4,882,588	3,925,683	4,043,000
Massachusetts	3,359,079	2,367,629	2,196,000
Connecticut	2,453,541	1,832,110	2,080,000
New Hampshire	3,721,173	2,262,064	2,116,000
Rhode Island	514,813	309,013	308,000
Total	21,483,772	15,857,927	15,463,000

CHANGES IN BASIC FACTORS IN N. E. FARMING, 1850-1935

	No. Persons	No. Farms	Total Acres Improved
1850	No data	167,651	11,150,594
1860	297,294	183,942	12,215,771
1870	314,810	180,649	11,997,540
1880	301,815	207,232	13,148,466
1890	304,448	189,961	10,738,930
1900	287,469	191,888	8,134,403
1910	280,760	188,802	7,254,904
1920	221,162	156,564	6,114,601
1925	* 657,755	159,489	5,395,140
1935		158,241	

* Includes total population

INCREASE IN VALUE OF FARM PROPERTY IN NEW ENGLAND, 1850-1920

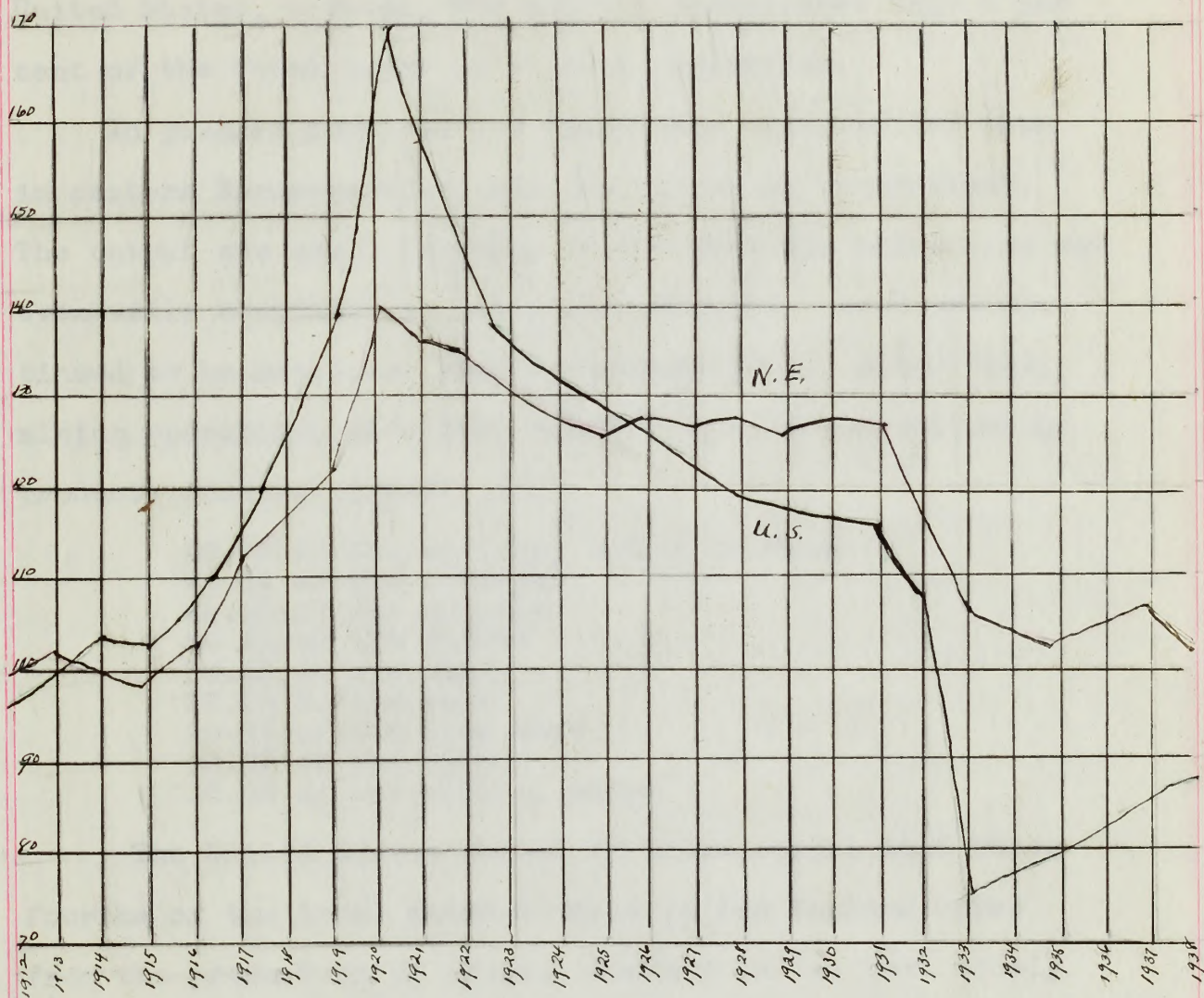
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1860	560,467,417	476,303,837
1870	566,353,952	468,133,979
1880	671,846,058	580,681,418
1890	585,267,817	489,570,178
1900	639,645,900	528,267,748
1910	867,248,457	718,544,808
1920	1,173,019,594	917,225,584

By 1935 Farm Property had decreased as follows:
 1,156,353,000 901,271,000

.....

Statistical Abstract of the United States, 1940. p.635, 640
 Artman, Charles, op. cit., p. 17

VALUE OF FARM REAL ESTATE PER ACRE



MINERAL ASSETS

New England has never laid claim to any great mineral wealth, although certain important minerals are to be found in substantial amounts. As compared with the rest of the United States, however, New England contributes only 1 per cent of the total value of mineral production.

In pioneer days shallow mines were operated for iron in eastern Massachusetts, and for copper in Connecticut. The output was small from the copper mine and extraction was eventually abandoned as being unprofitable. Iron ore continued to be mined for over a hundred years. Since then, mining operations have been carried on with the following products ranking highest: (1)

- 50.7% of the national output of mica
- 46.1% of the feldspar
- 44.9% of the granite
- 38.4% of the marble
- 36.3% of the slate
- 26.5% of the talc
- 20.7% of the trap rock
- 12.7% of the lime
- 10.0% of the mineral water

The United States Bureau of Mines report that three-fourths of the total mineral value in New England comes from the production of stone. Granite is the most widely distributed. Quarries in Massachusetts, Vermont, Maine, and Rhode Island and Connecticut are important in the order named. The leading marble deposits are to be found in Vermont. Vermont and Maine together produce 35% of the nation's slate. Limestone is found in all the New England

(1) Artman, Charles; op. cit.; p. 58

States except New Hampshire, but the most important deposits are to be found in western Massachusetts and along the coast of Maine.

In 1803, New Hampshire began mining its important mica deposits, and until 1868 was the only source of supply. In that year, North Carolina deposits were opened and they have lead in production since. These are still the only States supplying this important product.

Although North Carolina leads in the production of feldspar, nearly half the total production comes from New England. New Hampshire ranks second, Maine third, and Connecticut fifth.

Vermont is the only New England State producing talc in quantity. Mining was started a century ago and the grinding of talc commenced in 1902. Production has continued to increase. From 1917 to 1923 this State held the leadership in quantity, although New York State has always lead in value because of its higher grade. The largest known reserves of any producing State are in Vermont.

According to the latest available statistics, all mineral production in New England is valued as follows: (1)

(In thousands dollars)	Year 1938
New England	21,772
Maine	3,549
New Hampshire	1,147
Vermont	6,440
Massachusetts	6,666
Rhode Island	912
Connecticut	3,060

(1) U. S. Statistical Abstract, 1940

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According to the latest available statistics, all mineral production in New England is valued as follows: (1)

(In thousands dollars)		Year 1933
New England		31,772
Maine		2,242
New Hampshire		1,147
Vermont		6,440
Massachusetts		2,633
Rhode Island		212
Connecticut		2,080

Investigation of New Sources of Raw Materials

Dr. Karl T. Compton, chairman of the New England Council's New Products Committee, declared recently in a letter to Governor Saltonstall of Massachusetts that "New England must be awakened to the efforts that are being made in other parts of the country to evaluate and develop their mineral resources, often with State support." He went on to say he was convinced that proper appraisal and presentation of undeveloped mineral resources warrant the prudent expenditure of public funds. He believes that the competitive era which lies ahead demands the fullest use of those resources.

To this end, the New England Council formed a Mineral Resources Committee during the past year. The chairman, Harold Ladd Smith, gave the following information regarding its progress in an address before the American Institute of Mining and Metallurgical Engineers in New York City this spring. (1)

Glass-Sand

Investigation under the direction of Professor Frederick K. Morris of Massachusetts Institute of Technology, assisted by Professors Norton and Gaudin of Technology

Result: Two glass manufacturers in other parts of country decide to locate in New England.

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 (1) N.E. Council. News Letter, March, 1941, p.3

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of Technology
Result: Two glass manufacturers in other
parts of country decide to locate in New
England.

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(1) N.E. Council, News Letter, March, 1961, p. 2

Preliminary surveys being made of other large tonnage users of silica.

Other phases of glass and ceramics field have been studied.

Clay

Investigation under the direction of Professor F. H. Norton of Massachusetts Institute of Technology, assisted by Professors E. C. Jacobs of University of Vermont and A. M. Gaudin of Technology.

Result: Study of unique and extensive light colored clays of Vermont to determine their use as paper fillers and light face brick.

General Sand and Gravel

Investigation under the direction of Professor J. M. Trefethen of University of Maine, assisted by Professors A. W. Quinn of Brown University and George White of University of N. H.

Result: The suitability of sand and gravel aggregate for concrete in highway construction is being studied; also the suitability of quartz grinding pebbles to supplant the Belgian import.

Non-Metallics

Investigation under the direction of Professor Morris of Massachusetts Institute of Technology and Professor Bain of Amherst, and Roscoe J. Whitney of Leominster, Massachusetts.

Result: Attention is being given to the possibilities of the pegmatites, barite, fluorite, kyanite, sillimanite, spodumene, mica, asbestos, diatomaceous earth, and fuller's earth.

Bureau of Mines has assigned two experts to spend three weeks in New England.

Dr. F. L. Hess, mineralogist, specialized on the pegmatites and reported five or six definitely promising locations, not only as sources of feldspar and mica but beryl, lithium, caesium and other rare elements.

Metallics

Investigation under direction of Professor Quinn of Brown University, assisted by Professors White and Whitney.

Result: Listing all past operations in metals in New England--such as iron, lead, zinc, and copper.

Abrasives

Investigation under direction of Professor Edward L. Troxell of Trinity College.

Result: Study of emery, garnet and abrasive quartz.

Peat

Investigation under direction of Professor White of University of N. H.

Result: Studied peat production in the light of reduced foreign imports, and reports considerably increased output in Maine, New Hampshire, Massachusetts and Connecticut.

Marble, Granite & Slate

Investigation under direction of Professor Jacobs of University of Vermont, state geologist, assisted by Professors Quinn and Trefethen and Mr. Smith.

Result: Reviewing past studies of by-product uses of granite and slate waste.

Mineral or Rock Wool

Investigation under direction of Professor Bain of Amherst, assisted by Professor Troxell and Mr. Smith.

Result: Previous studies have been reviewed and economic problems of competition and fuel costs considered.

Correlation of Existing Information

Investigation under the direction of Professor White of University of N. H., assisted by Professor Morris and Mr. Whitney. Professor Charles Palache of Harvard is mapping Massachusetts minerals and compiling a bibliography, and in this work the committee is cooperating. Progress is delayed owing to lack of funds.

Needs of Defense

Following the above report given by Chairman Smith, the committee and others interested met with Dr. G. F. Loughlin, chief geologist of the United States Geological Survey, who is in charge of the United States Government Strategic Minerals Investigation; Dr. Oliver Bowles, Oliver C. Ralston, and J. R. Thoenen of the United States Bureau of Mines.

Dr. Loughlin told of the need new sources of mica to be used in defense industries. He believes there are untapped sources in New England of this material and of other minerals such as fluorspar, beryl, chromium, tungsten and nickel.

MANUFACTURING INDUSTRIES

As indicated in Part I of this paper, New England was for the most part engaged in the extensive industries during the colonial period. The extensive growth of forest throughout New England had turned the attention of the colonists to shipbuilding and its allied activities. The abundance of fish had led to the development of a large number of fisheries. Fishing had become a regular occupation, and shipbuilding had become a regular industry. Agriculture had been neglected, and the soil had become exhausted. In spite of the abundance of fish and the extensive growth of forest, the colonies had not developed a strong manufacturing industry. The colonies had been engaged in a large number of fisheries, and shipbuilding had become a regular industry. Agriculture had been neglected, and the soil had become exhausted. In spite of the abundance of fish and the extensive growth of forest, the colonies had not developed a strong manufacturing industry.

PART II--MANUFACTURING INDUSTRIES

In the course of developing economic activity, it was natural that the people of New England should turn to the manufacturing of goods. The colonies had been engaged in a large number of fisheries, and shipbuilding had become a regular industry. Agriculture had been neglected, and the soil had become exhausted. In spite of the abundance of fish and the extensive growth of forest, the colonies had not developed a strong manufacturing industry. The colonies had been engaged in a large number of fisheries, and shipbuilding had become a regular industry. Agriculture had been neglected, and the soil had become exhausted. In spite of the abundance of fish and the extensive growth of forest, the colonies had not developed a strong manufacturing industry. The colonies had been engaged in a large number of fisheries, and shipbuilding had become a regular industry. Agriculture had been neglected, and the soil had become exhausted. In spite of the abundance of fish and the extensive growth of forest, the colonies had not developed a strong manufacturing industry.

COLONIAL MANUFACTURES

As indicated in Part I of this paper, New England was for the most part engaged in the extractive industries during the colonial period. The extensive growth of forest throughout New England had turned the attention of the colonists to limbering and its allied activities. The abundance of fish had from the first engaged a large number of settlers. Fishing had encouraged shipbuilding, and shipbuilding had aided fishing; hence, both prospered. Agriculture had been diligently pursued to meet the needs, and in spite of the unfavorable climate and poor soil conditions, had been fairly successful.

In the course of developing economic self-sufficiency, it was natural that the people of New England should turn to the spinning and weaving of coarse homespun, and to the dressing and making up of leather. These and many other home industries served as a nucleus for the early attempts at manufacturing proper. To be sure, the hard conditions of pioneer life, the limited labor supply, the lack of capital, all worked against their development. Moreover, during this period of economic struggle within the colonies, England was pursuing the doctrine of Mercantilism with two objectives: (1) to encourage the colonies to continue to engage in extractive industries and in agriculture so as to supply her with adequate raw materials, and (2) to protect her manufactures from colonial competition and at the same time to keep them as ready markets for her surplus manufactures. To this end, bounties were offered on

raw materials while laws were passed restricting manufactures which threatened to compete with those of England. Beginning in 1645 and extending to 1766, a series of Navigation Acts were passed restricting commerce; and from 1763 to 1775, additional duties were added as revenue for the support of colonial government and for colonial military protection.

Meanwhile, the costs of importing iron, cloth, and leather goods caused the colonists to seek ways of becoming more economically independent. They determined to engage in foreign trade and to develop their manufactures. Consequently, they evaded the laws and the duties in every way possible. Finally their relations with England became irreconcilable and culminated in the Revolutionary War.

Textiles

In 1640, Massachusetts offered a bounty of 25% on the production of cloth as a means of encouraging this industry. Within three years, the treasury was so drained that it was necessary to repeal the offer. (1) In 1656, the General Court of Massachusetts passed a law calling for compulsory spinning and weaving within the commonwealth. Later, with the arrival of immigrants more skilled in the textile industry, fulling mills were build. By 1731, the colonists were making about three-fourths of all the cloth used, and only the finer grades were imported from England and Ireland. England began to worry about colonial competition. In that year, the Board of Trade and Plantations made an investigation "with respect to

(1) Bogart, Ernest I. Economic History of U.S., p. 59

laws made, manufactures set up, or trade carried on in the colonies, detrimental to the trade, navigation, or manufactures of Great Britain." (1)

Metals

The only metals extracted from the earth during the Colonial period were iron, copper, and lead. Of these iron was by far the most important. Bog ore was first discovered in eastern Massachusetts. It was easily mined and the first iron foundry was established on the banks of the Saugus River in 1643. (2) In the year 1691, an ore much better than bog was found in the bottom of ponds. A copper mine was opened at Symsburg, Connecticut in 1721. (3) By 1731 there were at least six furnaces and nineteen forges in New England. Agricultural implements, household utensils, tools, and firearms were being produced in increasing numbers. (4) An official report of 1850 gave one furnace for making steel in Massachusetts, but its location was unknown. The first known furnace for steel was established in Easton by Eliphalet Leonard in 1785. Although the colonies were not yet producing one quarter of their needs, England became alarmed and so Parliament passed a law in 1750 to prohibit the erection of any slitting or rolling mill, plating forge or steel furnace, under penalty of two hundred pounds. (5)

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- (1) Bogart, Ernest L., op. cit., p. 57
 - (2) Davis, Wm., New England States, Vol. I., p. 361
 - (3) Lippincott, Isaac, Economic Development of U. S., p. 88
 - (4) Davis, Wm., op. cit., 361
 - (5) Bogart, Ernest L., op. cit., p. 57

Boots and Shoes

Available records do not show clearly when or where footwear was first made by the colonists. It is definitely known, however, that two shoemakers from England arrived in the Massachusetts Colony prior to 1630, to work at the trade and to supply other settlers with boots and shoes. (1) These men were probably the first to engage in the making of shoes in the colonies. As migration continued, other European shoemakers arrived. Many were apprenticed to the trade in the colonies. Production steadily increased, and by the close of the seventeenth century the output was almost sufficient to meet the needs. Additional progress was made during the following seventy-five years, and immediately prior to the Revolutionary War a small but growing export trade had been developed. (2)

Other Manufactures

Although the textiles, the iron and steel products, and the footwear were the most important manufactures of the colonies, others were developed on a small scale to meet local needs. These included: corn and grist mills, leather goods of all descriptions, furniture, cabinet wares, tinwares, bricks, tiles, potteries, cordage, twine, sail-cloth, paper, rum, hats. (3)

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 (1) U. S. Department of Commerce. Foot and Shoe Industry. p. 5

(2) Ibid., p. 6

(3) Bogart, Ernest., op. cit., p. 58

MANUFACTURES, 1789-1860

At the close of the Revolutionary War, the colonists found themselves politically independent, but not industrially so. The interruption of foreign trade during the war had temporarily served as a stimulus to the struggling colonial manufactures, but they could not compete with the influx of cheap manufactures from England after the war. The Industrial Revolution was underway in England. The new machinery was revolutionizing the textile industry there, and England meant to control the manufacture of cotton and woolen goods by holding a monopoly on the machinery. For this reason, Parliament passed laws prohibiting the exportation of all machines, plans, tools, and models.

Textiles

In the year 1789, Samuel Slater, a skilled textile worker from the Arkwright factory in England, came to the United States. He was able to construct from memory the new textile machinery, and opened the famous Slater Mill in Pawtucket, Rhode Island. This marked the beginning of the Industrial Revolution in the United States, and earned for Slater the name of "Father of American manufactures." By 1812, 53 mills equipped with 448,000 spindles had been established within thirty miles of this first venture, and there were many others throughout Massachusetts. (1) In 1813, the first factory in the world to use all power machinery for spinning

and weaving was established on the Charles River at Waltham, Massachusetts. From that time on, great industrial progress was made in southern New England until the outbreak of the Civil War.

Fall River soon became the leader in cotton manufacture, and for a number of years more than 100 cotton mills were kept busy there. Meanwhile, with the decline of the whaling industry, New Bedford had turned to cotton manufacture. Close rivalry existed between these neighboring cities. Fall River specialized in the production of medium and low grade fabrics, while New Bedford specialized in the finer class of yarns and woven goods.

The first accurate census of the country's manufactures was made by the Federal Government in 1850. At that time six-sevenths of all the cotton used in the United States was made in New England--one half of which was manufactured in Massachusetts. In 1860 the production value of cotton goods in New England was \$80,301,535. (1)

The woolen industry has always been hampered by the lack of sufficient domestic raw wool, and by the high taxes on imported raw wool. For this reason, its manufacture did not develop so fast as did cotton.

The first American woolen mill containing more than one loom was established at Hartford in 1788, and the first fulling mill to use water power was set up in Wyfield, Massachusetts, in 1794. Practically no progress was made, however, until

(1)Lippincott, Isaac, op. cit., p. 203

after the War of 1812. Restrictive trading of that period gave to the woolen industry a necessary boost, and it was quite well established by 1828. With the introduction of the first wool-combing machine at Lawrence, Massachusetts, in 1854, outstanding development was made. (1) From 1854 to 1866, the reciprocity treaty with Canada was in force, and this gave to New England the needed supply of long-staple wool. In 1860, the production value of woolen goods in New England was \$38,509,000. (2)

Metals

Although iron had first been mined and manufactured in New England, the supply was comparatively limited. As the West was settled, the largest deposits in the country were opened, and with the coming of adequate transportation facilities, their development was assured. In no industry in the United States has growth been so great as in the iron and steel. This was made possible by the immense resources and an ever growing market. From 1810 to 1860 production moved from New England to the sources of new supply, causing this section to decline in iron production. Pennsylvania rose to the rank of leader in production, but throughout this period New York, New Jersey, and Massachusetts still manufactured large quantities. In 1860, Massachusetts produced 25,000 tons and Connecticut produced 20,700 tons. The production of steel was of relatively small importance until after 1860.

(1) Artman, Charles, op. cit., p. 340.

(2) Lippincott, Isaac, op. cit., p. 204

Boots and Shoes

Prior to 1845, the boot and shoe industry was in the strict sense a hand process. New Englanders followed shoe-making in winter, and turned to farming and fishing in the summer. In those days, children went to school but also worked at stitching and other parts of the shoe as they could. Here, at the family hearth, ideas originated which afterward took practical form in the construction of machines of inestimable value. Just before the application of machinery, Massachusetts accounted for more than 40% of the total production. (1) Beginning in 1851 and continuing through the next fifty years more mechanical equipment was developed for this industry than in any other similar period. A very important trend during this period was the marked decline in the number of establishments. This happened because not all of the small shop owners could afford to buy or lease the available equipment, without which they could not compete with those who did. There were many consolidations in the industry, and many retired entirely from this field of endeavor. The census data of 1860 places the number of establishments in the industry at 12,480 with invested capital at less than \$23,400. (2)

Other Manufactures

The most important industries which were developed during this period, in addition to those already named, were the fol-

(1) U. S. Department of Commerce, Boot and Shoe Industry. p.6

(2) ¹bid. p. 9

lowing, given in the order of their importance: flour and meal, sawed lumber, men's clothing, leather and skins, miscellaneous machinery, sugar refining, provisions, printing and publishing, carriages, distilled liquors, furniture and cabinet wares, tobacco and snuff, malt liquors, paper, soap and candles, oil, agricultural implements, bread and crackers, hats and caps, tin, copper and sheet iron, marble and stone.

Manufactures 1860-1941

From 1860 to 1900, manufacturing in the United States increased more than a hundred-fold. By the turn of the century, this nation ranked first among the manufacturing nations of the world. The tremendous expansion was due to the coming of the Industrial Revolution with its important inventions and new machinery, and to the westward movement with its new raw materials and markets. In addition to these factors, protective tariffs were set up to aid the infant industries.

The end of the 19th century saw the rise of a new era of economic development--invasion of foreign markets by American manufactures in competition with other exporting nations; the growth of trusts and industrial combinations which reorganized production and led to new methods in both industry and finance; the growth of labor unions.

During this period, New England won first place as the manufacturing center of the nation. Here manufacturing industries had been born and here they developed. It was inevitable that as new sources of raw materials were found and new markets opened, some of the manufacturing would tend to follow. But in spite of this migration, New England has been able to hold her enviable position.

Metals

Long since have the old bloomeries and refining forges and furnaces disappeared from New England. In their place

have come iron and steel industries of endless variety and vast extent which employ skilled mechanics and add greatly to the nation's wealth. Machine shops, locomotive works, foundries, bridge works, cutlery works, nail and tack factories, hardware establishments, file and screw factories, agriculture implement works, wire works, steel works, modern blast furnaces, rolling mills have supplanted the bloomeries, the charcoal furnaces, and the chimney-corner nail factories of a by-gone day.

According to the Biennial Census of Manufactures, there are today 83 distinct metal industries in the United States. Of this number, 55 are sufficiently important in New England to warrant separate statistics. Since 1925, the metal industries have continued to increase in activity, and now head the list of industries in New England.

Metal products include machinery, foundry and machine-shop products, engines and waterwheels, brass and bronze products, copper, tin, sheet iron, wirework, forgings, steam fittings, cutlery, jewelry, plated ware, silverware, clocks and watches, firearms, hardware and tools, plumbers' supplies, typewriters, sewing machines, needles, pins.

Textiles

Until 1870, the New England States monopolized the textile industries in the United States. Since that date, however, there has been a shift in production of coarse cotton

to some of the southern States. Increased taxation and the development of protective labor legislation have been factors in this migration. Moreover, the south offered various inducements: exemption from taxation for a number of years, favorable schedules arranged by railroads, nearness to raw materials, lower labor costs, and cheap power.

The south will undoubtedly always be a source of competition for New England cotton production. In 1914, more than half the total output of cotton goods were produced by the New England mills. At present, the amount has dropped to one fifth. Most of the coarse goods industry has moved to the South where the cost of production is less, but New England still produces about two-thirds of the nation's fine cottons.

There has been little change in the production of wool and the proportion remains about three-fifths of all the woolen and worsted goods of the country, the same as it was in 1900.

Boots and Shoes

The shoe industry evolved from the little workshop in Civil War days to the colossal factory buildings of the present. Beginning in 1851 and continuing through the next fifty years more mechanical equipment was developed for this industry than in any other similar period.

While the New England leather and boot and shoe industry was for a long time confined to Massachusetts, there was considerable migration away from this center from 1900 to 1934.

Some of the business went to Manchester, Nashua and Dover, New Hampshire, and to Auburn and Gardiner, Maine; while some of it went to the markets of the West. Nevertheless, Massachusetts continues to produce about three times as many shoes as can be consumed in the entire New England area. Brockton is the leading center of the manufacture of men's shoes. Lynn, the second shoe city of New England, makes a specialty of women's shoes and in this line leads the world. Haverhill is the world's greatest slipper and low-cut footwear city. Peabody, Massachusetts, is the world's greatest sheep-skin tanning center. Woburn and Winchester are also important leather centers.

In 1940, New England shoe factories produced 56 per cent of the total production for the United States. Massachusetts led the country's shoe-producing States with its output of 74,785,035 pairs. This amount, however, was 8% below its 1939 figure, according to the New England Shoe and Leather Association's recent finding. During that year, the three shoe States of New England--Maine, New Hampshire, and Massachusetts--together produced over 170,000,000 pairs, which represented a loss of 7.5% from its 1939 output. The national decline for the same period was 6%.

New England has also taken front rank as a producer of modern shoe machinery. The work of nearly 100 of these wonderful machines is necessary to the production of the twentieth century shoe; and New England, through the United

Shoe Machinery Company, has a practical monopoly of the manufacture of these. This company's great factories at Beverly, Massachusetts, turn out thousands of shoe machines for lease. It has branch establishments making thousands more in several foreign countries.

Specialties

In addition to the stable products which have been mentioned in this paper, there have grown up everywhere in New England countless specialties in manufacturing. It would be impossible to list them all, but the following are representative. Leominster, Massachusetts makes a very large proportion of the shell goods manufactured in the United States; Worcester makes a great proportion of the wire and wire goods produced in the country, and is the seat of the metal-working machines and tools; Athol, Mass., makes three-quarters or more of the fine machine tools made in the world; Holyoke, Mass., makes half or more of the fine papers made in the United States; Dalton, Mass., makes all of the papers which the government uses for its currency, and a large proportion of the high-class ledger paper; Pittsfield, Mass., leads in the production of correspondence papers and in the making of boxed writing paper; Mittineague, Mass., has earned distinction for making paper for high-class commercial and correspondence purposes; Brockton and Lynn mean shoes the world over; Manchester, Fall River and New Bedford mean cotton; Plymouth has the largest cordage concern; Attleboro, Mass. and Providence, R. I., lead the world in jewelry, and Providence

has the most noted silversmith establishment in the country; South Framingham, Mass., has the unique Dennison concern, making a bewildering variety of fancy and useful articles from paper; Rutland and St. Johnsbury, Vt., have each great scale works, while Rutland and its vicinity produce much of the marble quarried in the country.

Diversified Industries

There was a time when New England was the workshop of the nation. It was here that manufactures were born, here inventions were made, and here industry developed. There grew up the belief that New England was ordained to make all of the goods the country needed, of whatever kind or nature. We have different ideas now, which have been banged into us by the people who discovered that there is a certain fitness of locality for the manufacture of certain goods. We discovered that machinery consisting more of iron than workmanship should be made nearer to the supply of iron and coal than we are located. We found that cheaper grades of cotton cloth could better be made in the south where production costs are lower. We have seen the migration of part of the shoe industry to its source of raw materials and markets in the West. New England has learned what it can do most profitably, and what the other sections of the country cannot profitably do, in the way of manufacturing. It has begun to understand that the great manufacturing asset of New England is brains-- the brains of the men who have the money and the courage to install new industries, and particularly the brains of the

skilled artisans who have the expertness to make these industries thrive.

This brain asset has converted New England into one of the most diversified manufacturing sections in the world. Approximately two hundred and twenty-five distinct lines of industry are represented here, or about two-thirds of all types of industries listed in the United States Census for the entire country.

Towns and cities have enticed, in their own unique way, new industries to take the place of the once thriving textile mills. In the past five years, the New Haven Railroad's industrial department has succeeded in bringing to New England 625 new industries, employing a total of nearly 30,000 people, according to Mr. Wall, vice-president of the road. (1)

The following case illustrations are indicative of what has been taking place.

The Amoskeag Mills of Manchester, the largest textile plant of its kind in the world, employed about 18,000 workers. In 1912, Amoskeag closed its doors. Through the efforts of Manchester's former mayor, the city took over the property. By 1937, Amoskeag Industries, Inc. had been successful in renting 60 per cent of the total floor space to sixty-two small companies. In that year the city produced goods valued at \$48,245,359 as against \$37,350,836 in 1933.

The Everett Mills in Lawrence, some ten years ago, silenced

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(1) New England Council, N. E. News Letter, June, 1941. p. 13

their cotton looms and as a result 1,500 workers found themselves unemployed. Within a comparatively short time, a young man named Russell W. Knight set to work in an endeavor to induce industries to settle in Lawrence. Through his untiring efforts sixty different concerns rented space in the abandoned Everett Mills. At present there are 4,000 persons employed where once 1,500 cotton spinners worked. In 1937, Lawrence boasted of manufactures worth \$114,887,471 against \$83,021,695 in 1933.

The city of Lowell no longer depends entirely on the cotton industry for its life. Of the million square feet of space in one cotton mill, 95% is now occupied by 14 different industries. Another cotton factory has filled its 600,000 square feet of space with 20 manufacturing concerns. Its products include bobbins, spools, boots and shoes, boxes, clothing, print goods, foundry and machine-shop manufactures, furniture, insulated wire, knit goods, foodstuffs, paper, printing and publishing outputs, proprietary medicines, silk and rayon, textile machinery, thread, electrical specialties, and the noted Harvard Ale. Lawrence Dame, in his book, *New England Comes Back*, says, "A phenomenon noticeable in other comeback cities can be seen in Lowell. The same number of workers employed in diversified industries are making more money than they did in the defunct textile manufactures. Higher wages are being paid, and the products now turned out sell at many times the amount formerly obtained for cotton." (1)

..... Fall River has an interesting story to tell. Here were
 (1) Dame, Lawrence, *New England Comes Back*, p. 160

located the oldest and largest textile mills in the United States. In 1921, 290 mills were operating 4 million spindles. Nine years later less than a million were in operation. The textile pay roll had dropped from \$30,000,000 to \$15,000,000 between 1919 and 1933. One-quarter of the city's citizens were on relief. Today, Fall River is flourishing! The Chamber of Commerce enlisted the moral support of railroads, banks, public utilities and real-estate brokers. More than 140 concerns have moved in. Once relying on the manufacture of coarse cotton cloth, this city now turns out almost everything from ice-cream cones to latex mattresses of the new Firestone rubber plant. Employing more people in many former textile mills than ever before, the city makes clothing, optical goods, curtains, bath robes, overalls, felt hats, paper boxes, iron castings, thread, smokers' supplies, hosiery, raincoats, bindings, cotton waste, bath towels, trunks, brushes, shoe laces. (1)

Boston and its surrounding territory attracted 82 new industries in 1932, employing more than 3,500 persons. There were 70 expansions of existing plants. (2)

- Taunton lost 94 industries between 1919 and 1935, so she, too, turned to diversification. Taunton today is making 200 different articles ranging from Reed and Barton silverware to Glenwood stoves. In 1937, the value of products amounted to \$18,724,023 as compared with \$12,591,276 in 1933. (3)

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- (1) Dame, Lawrence. New England Comes Back; p. 171
 - (2) Ibid., p.172
 - (3) Ibid., p.169

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(1) Lane, Lawrence. New England Comes Back; p. 171

(2) Ibid., p. 172

(3) Ibid., p. 182

Providence is another city of diversified industry. It has more than 217 different industries with products ranging from artificial flowers made in a huge modern plant to heavy industrial machinery. Providence makes about 70 per cent of all the low and medium priced jewelry in America--only Attleboro, Massachusetts, can come anywhere near the Providence jewelry record. Other specialties of Providence include electrical and rubber goods, Rumford Baking Powder, Gorham silver, Barreled Sunlight paint, Brown and Sharpe tools. In 1937 Providence boasted of 740 plants as against 628 in 1933.

A glimpse of what is being done in the way of continued diversification may be gleaned from some of the reports turned in to the Industrial Committee of the New England Council by various manufacturers, Chambers of Commerce and other organizations throughout New England. A few representative reports taken from the list of the past year are given to the reader in the next few pages. It is quite evident that diversification has been the salvation of New England.

In 1939 the number of manufacturing establishments had mounted to 16,135. The number considerably exceeds that total to date, owing to the many new plants which have since opened up. According to a recent analysis of the Census data by the Bureau of Foreign and Domestic Commerce, there were 1,073,132 persons employed in 1939, and they received a total of \$1,308,567,000 in salaries and wages. Of these workers, 120,259 were salaried employees receiving \$284,287,556 and

952,873 were wage earners receiving \$1,024,279,360.

Compared with the totals of manufacturing in the United States during 1939, New England accounted for 8.7 per cent of the establishments, 12 per cent of the salaried personnel and wage earners, and approximately 11.2 per cent of the salaries and wages paid. Wages paid in New England constituted 21 per cent of the value of manufactured goods against 16 per cent for the entire country. (1)

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(1) New England Council. News Letter, April, 1941, p. 7

Recent Signs of Business Expansion
in
Maine.

Norway: Semi-precious stones mined in this vicinity are now being cut and polished here instead of in Europe, and available machinery adapted to the tasks.

Stonington: The Deer Isle Packing Company is now canning crab meat under a new process developed by Professor Carl R. Fellers of Massachusetts State College. This represents the first occasion in New England's history that local crabs have been canned.

Augusta: The Maine Development Commission announces that the General Electric Company of Lynn, Massachusetts, has contracted for the entire output of seven Maine machine shops. This work will bring approximately \$300,000 into the state, and will necessitate employment of two additional crews in the shops.

Camden: A new organization, the Camden Shipbuilding and Marine Railway, Inc., has replaced the former Camden Yacht Railway Company. The firm has already started work on two 96-foot mine sweepers for the United States Navy. Employment has more than tripled since the new company began operations.

South Portland: Todd-Bath Iron Shipbuilding Company has completed nearly 1,000 tons of fabricated plates to be used in construction of 30 cargo carriers for Great Britain. Seven drydocks are under construction. The company has established its own school to train welders.

Recent Signs of Business Expansion in New Hampshire

Manchester: Manchester Dyeing and Finishing Company has taken over the most modern unit of the former Amoskeag Mills and will start production there soon. Between 750 and 1,000 workers will be employed at capacity.

Manchester's Raylane Worsted, Inc., a wholly owned subsidiary of Amoskeag Industries, will continue to operate at capacity. The firm now employs 750 people, as compared with 320 a year ago.

Somersworth: Great Falls Woolen Mills has been taken over by Textile Fiber Company of Waltham, Massachusetts. Production at first will be confined to finishing of fiber materials, but later, actual manufacture of fiber is contemplated.

Dover: The American Woolen Company plant, closed last April, has reopened to make army blankets and upholstery fabric.

Claremont: Charlestown Woolen Company has resumed operations after a three-year shut-down.

East Rochester: Cocheco Woolen Manufacturing Company has cancelled its scheduled auction sale and plans to resume work.

Laconia: B-K Hosiery Mills, Inc., plans early operation of a local mill. The company was recently organized with a capital of \$50,000.

Twenty-one other industries have located or resumed operations in New Hampshire during the period of 1936 to 1940, according to the biennial report of the State Planning and Development Commission. These concerns provided total pay-

rolls of \$6,444,610 and employed 3,710 persons. The industries are: American Core Twine Corporation, Salmon Falls; American Woolen Company, Lebanon; Amoskeag Hamper Company, Manchester; Ashland Paper Mills, Banner Shoe Company, Dover; Beebe Bros. Rubber Company, Nashua; Chelmsford Shoe Company, Derry; Conway Toys, Inc., Conway; E. Cummings and Brother Leather Company, Lebanon; Dover Shoe Company, Greenville Mills, Inc., Holly Bros. Shoe Company, Littleton; Laconia Milling Corporation, Marks Bros., Dover; Montello Shoe Company, Suncook; New England Screw Company, Keene; Newmarket Distillers, Penacook; Fibre Company, Smith, Miller and Hermer, Salmon Falls; Tilton Leather Company and Tilton Worsted Company.

Recent Signs of Business Expansion
in
Massachusetts

Agawam: Agawam Woolen Mill Company reopened recently to manufacture women's wear. Employees are expected to number 140.

Boston: Naval facilities equal to any on the American continent will be secured for Boston when the plan proposed by Rear Admiral W. T. Tarrant, commandant of the 1st Naval District, is approved by Congress and the Navy Department. Size of the Navy Yard and its drydock facilities would be doubled. Proposed improvements include: Huge, new retaining walls, additional piers and drydock berths, workshops and administration buildings. Work would be provided for a total of 20,000 civilians at an annual payroll of approximately \$30,000,000. The City of Boston has already agreed to give the government 75 acres of land, valued at \$4,000,000 for the expansion.

Boston: Atlas Knitting Mills, Inc., has leased 7,000 square feet of additional space for expansion.

Boston: Holyoke Printing and Finishing Company plans to operate textile printing and finishing mill, capital \$20,000.

Boston: Substantial expansion in 1941 is expected by the Thompson Water Cooler Company which has just completed its 10th year as New England distributor of General Electric drinking water coolers.

Chicopee Falls: J. Stevens Arms Company, division of Savage Arms Corporation, plans to spend \$60,000 on extensions and improvements to the former plant of Westinghouse Electric and Manufacturing Company which the Arms Company recently acquired.

Fall River: Bristol Manufacturing Corporation of Bristol, Rhode Island, has arranged with the City Council to purchase a 1-story mill. The firm will remodel it, spending \$50,000 with equipment.

Fall River: Excel Foundry and Machine Company of New York has taken over the plant formerly occupied by the Fall River Bleachery to manufacture shells and fuses. Some 500 persons will be employed.

Fall River: Narragansett Mills are planning to reopen after idleness of three years.

Fall River: Lorraine Yarn Mills, Inc., has recently been organized to operate a local mill.

Gloucester: A new fish filleting firm, the Mariners Fish Co., is operating, specializing in whiting, perch and pollock fillets. Fifty local workers are employed.

Holyoke: The newly organized Holyoke Worsted Company has started operations in the property of Holyoke Worsted Mills. Fine men's wear will be produced on 58 looms.

Holyoke: Farr Spinning and Operating Company, a subsidiary of the Berkshire Fine Spinning Associates Corporation, which took space in the former Farr Alpaca cotton mill a year ago, has now

a force of 450 workers.

Pal Blade Company of New York has leased some 100,000 square feet in the former Farr Alpaca mill.

Another newcomer to the same plant is the Holyoke Fabrics, Inc. which will specialize in tropical worsteds and interlinings.

Lawrence: A new company will be organized to operate the former plant of George E. Kunhardt Corporation, recently bought by Robert N. Dobbins of Brookline, Massachusetts. The mill will be improved and equipped for wool scouring, carding and combing. Estimated cost is over \$60,000 including equipment.

Lawrence: The Everett Mill Properties, Inc., formerly the Everett Mills, now house 70 diversified industries which employ some 4,000 workers, whereas the cotton mill used to employ an average of 1,500. Nearly two-thirds of the 1,500,000 square feet of floor space owned and occupied by the former Everett Mills is now owned and operated by the new corporation. A few of the new industries are the Crolide Company, manufacturing artificial leather; the Institute of Industrial Welding, a training school; the McQuesten Company, dealers in office equipment and supplies; the Solflex Corporation; the Essex Macaroni Company; the Textile Aniline and Chemical Company; the G. W. Marsden and Sons, distributors of barbers' supplies; Grieco Brothers, Inc.; F. W. McLanathan and Son, Inc., manufacturers of leather and mill supplies; Essex Textile Mending Co.

Lowell: Nashua Manufacturing Company will soon reopen its plant here. Once employing 1,400, the factory was closed several years ago.

Ludlow: Eighty rugs a day will be produced by the Ludlow Carpet Company which has begun operations.

Lynn: General Electric Company plans to enlarge two of its shops here to make reduction gears for propulsion equipment. This is part of a \$11,500,000 expansion program.

Medford: Medford Wool Scouring Company, recently chartered for \$100,000, plans to operate a local mill.

New Bedford: a 90-day option on 50 acres of waterfront property has been taken here by a group of Greater Boston men. Intention is to erect a shipbuilding plant where 3,500 men will ultimately be employed.

New Bedford: Cornell-Dubilier Electric Corporation, a New Jersey firm, has purchased a former plant of the Kendall Mills, Inc., known as the Holmes Mill. They expect to have a payroll of 800 within the year.

New Bedford: Seven firms have begun operations in New Bedford during May, 1941. They are: N. B. Venetian Blinds, Inc., employing 250 men and women; Glandale Fashions, Inc., employing 150 women; Normandy Print Works, 250 men; M. S. Dress Shops, 150 women; Harmony Garment Company, 100 women; Bias Coating Company, 25 men; and Silmo Packing Company, 20 men.

Jewell: Machine Manufacturing Company will soon reopen its plant here. Once employing 1,400, the factory was closed several years ago.

Indlow: Eighty rugs a day will be produced by the Indlow Carpet Company which has begun operations.

Igum: General Electric Company plans to enlarge two of its shops here to make reduction gears for propulsion equipment. This is part of a \$11,500,000 expansion program.

Medford: Medford Wool Scouring Company, recently chartered for \$100,000, plans to operate a local mill.

New Bedford: a 90-day option on 50 acres of waterfront property has been taken here by a group of Greater Boston men. Intention is to erect a shipbuilding plant where 2,500 men will ultimately be employed.

New Bedford: Corwell-Lubliner Electric Corporation, a New Jersey firm, has purchased a former plant of the Kendall Mills, Inc., known as the Holmes Mill. They expect to have a payroll of 300 within the year.

New Bedford: Seven firms have begun operations in New Bedford during May, 1941. They are: M. B. Venetian Blinds, Inc., employing 250 men and women; Glendale Fashions, Inc., employing 150 women; Notwendy Print Works, 250 men; M. B. Dress Shops, 150 women; Harmony Garment Company, 100 women; Elias Coating Company, 25 men; and Stino Packing Company, 20 men.

North Adams: Newly formed Blackington Mills, Inc., is preparing to take over operation of the former Blackington Woolen Company.

Northboro: Blackburn Worsted Company, recently organized, will soon operate a mill here.

Pittsfield: The plastics department of General Electric Co. will soon undergo a \$400,000 expansion program. New buildings and equipment will be added here and at Meriden, Connecticut, and equipment at Lynn, Massachusetts; 75 per cent of the money will be spent in Pittsfield.

Springfield: Longmeadow Mills, Inc., will soon reopen as successor to the Harris Silk Hosiery Company.

Springfield: Gorman Heat-Treating Corporation has opened a modern plant with latest equipment in the old Rolls-Royce building.

Springfield: Hodges Fibre Mills, purchaser of much equipment from the former Hodges Carpet Company, is operating in the Springfield suburb of Indian Orchard.

Springfield: The largest single plant in the country for the production of plastic raw materials has been opened here by the plastics division of the Monsanto Chemical Company.

Springfield: The Van Norman Machine Tool Company will soon be employing well over 2,000. A new \$2,000,000 government order for milling machines has been placed for defense.

Taunton: General Electric Company has decided to reopen its former motor plant here, idle since 1920, for manufacture of plastic molded parts. Operations will begin within four months

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Springfield: Intermashow Mills, Inc., will soon reopen as successor to the Harris Silk Hosiery Company.

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Taunton: General Electric Company has decided to reopen its former motor plant here, idle since 1920, for manufacture of plastic molded parts. Operations will begin within four months.

and 400 will be employed.

Webster: The Tiffany Woolen Mill will soon be reopened by a newly organized Boston concern which has bought the plant.

West Warren: Operation of a local dye and finish mill will be undertaken by the Davan Dyeing and Finishing Company, recently organized.

Wollaston: G. and P. Thread Corporation, recently organized, will operate a local mill.

Worcester: American Steel and Wire Company will soon put up a 1-story structure to cover 14 acres--described as the largest building of its kind in the country. The building--a wire and strip finishing mill--will cost one million dollars and is part of an eight million dollar expansion program.

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Recent Signs of Business Expansion
in
Rhode Island

Greystone: Flax Processing and Linen Company has contracted for 100,000 square feet of space in the Joseph Benn Textiles, Inc., plant here. At the start, 250 will be employed to manufacture linen yarn.

Pawtucket: So numerous have been mill sales and vacant plant leasings in the Blackstone Valley that the Industrial Committee of the Pawtucket Business Men's Association and Chamber of Commerce feels it may soon be faced with a shortage of available space. At present, only 1,807,468 square feet are left from a total of 3,813,779 square feet in 1936, plus an addition of 1,869,371 square feet since then. Fifty-two new industries have entered the Valley during the past four years.

Providence: Hassenfeld Brothers, manufacturers of school supplies and leather goods, will soon occupy the Waypoyssett Mill, employing 300 persons.

Wakefield: Synthetic Moulded Products, Inc., opened their new \$45,000 plant around October 1, 1940, for the manufacture of plastic products.

Warwick: Elizabeth Mills here have been purchased by Leviton Manufacturing Company of Brooklyn, N. Y. The concern is to make electric wiring devices, and is to employ more than 300.

Recent Signs of Business Expansion
in
Rhode Island

Greystone: Text Processing and Linen Company has contracted for 100,000 square feet of space in the Joseph Bern Textiles, Inc., plant here. At the start, 250 will be employed to manufacture linen yarn.

Pawtucket: So numerous have been mill sales and vacant plant listings in the Blackstone Valley that the Industrial Committee of the Pawtucket Business Men's Association and Chamber of Commerce feels it may soon be faced with a shortage of available space. At present, only 1,807,488 square feet are left from a total of 3,813,779 square feet in 1936, plus an addition of 1,869,371 square feet since then. Fifty-two new industries have entered the Valley during the past four years.

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Recent Signs of Business Expansion
in
Connecticut

Bridgeport: The Aluminum Company of America recently purchased four unoccupied buildings of the Crane Company here. This expansion will enable the Aluminum Company to more than double its output of castings for airplane engines.

Bridgeport: Auto-Ordinance Corporation has purchased the former plant of Raybestos-Manhattan, Inc., and will use it for manufacture of tools and gun parts. Two hundred will work here.

Bridgeport: A \$4,000,000 construction addition for manufacturing tools used in the automobile and aviation industry has been announced by the Bullard Company. The company hopes to double its production when expansion is completed.

Bridgeport: Manning, Maxwell and Moore, Inc., has leased some 50,000 square feet of floor space in the former local plant of Saltex Looms, Inc.

Danielson: A new industry may soon be established in the Quinebaug Mills. It will be a Connecticut corporation.

Deep River: Production of lamps has started here by the Sight Light Company employing 25.

East Hartford: The last of four new factory buildings to the engine manufacturing facilities of Pratt and Whitney Aircraft Division of United Aircraft has been completed.

East Hartford: The Eastern Centerless Grinding Company will soon begin operations in the plant of the former Eastern Parlor Frame Company.

Recent Signs of Business Expansion in Connecticut

Bridgeport: The Aluminum Company of America recently purchased four unoccupied buildings of the Crane Company here. This expansion will enable the Aluminum Company to more than double its output of castings for airplane engines.

Bridgeport: Auto-Ordinance Corporation has purchased the former plant of Raytheon-Manhattan, Inc., and will use it for manufacture of tools and gun parts. Two hundred will work here. Bridgeport: A \$4,000,000 construction addition for manufacturing tools used in the automobile and aviation industry has been announced by the Bulfinch Company. The company hopes to double its production when expansion is completed.

Bridgeport: Manning, Maxwell and Moore, Inc., has leased some 30,000 square feet of floor space in the former local plant of Saitex Looms, Inc.

Danbury: A new industry may soon be established in the Quinebaug Mills. It will be a Connecticut corporation.

Deep River: Production of lamps has started here by the Night Light Company employing 25.

East Hartford: The last of four new factory buildings to the engine manufacturing facilities of Pratt and Whitney Aircraft Division of United Aircraft has been completed.

East Hartford: The Eastern Centrifugal Grinding Company will soon begin operations in the plant of the former Western Filter Frame Company.

East Killingly: Idle for four years, the Davis and Brown Woolen Mills will soon be reopened by N. Lorne Greig who has purchased the property.

Elmwood: The United Tool and Die Company of Hartford has purchased two 1-story buildings in the plant formerly operated by General Motors Corporation. The buildings will be used by Acme Tank and Welding Division of United Tool.

Groton: The Electric Boat Company has opened the new \$3,000,000 addition to its submarine shipyard. Total expansion at the shipyard amounts to about \$4,750,000. Three new ways are ready at the south end of the yard and four at the north end. Eight submarines are under construction.

Groton: Groton Iron Works Shipyards will be modernized to build steel freighters for the British government. The yards have been idle for several years.

Hamden: The Defense Plant Corporation has announced a lease agreement for construction of a machine gun factory here to cost \$4,300,000. The High Standard Manufacturing Company of New Haven will operate the plant on lease.

Manchester: Pioneer Parachute Company, Inc., has started a program to triple its present facilities. Its production of 50 'chutes a week a year ago has been raised to 500. The company plans to increase its floor space from 15,000 to 45,000 square feet, and its employment from 230 to 300 hands.

East Kentucky: Mills for four years, the Davis and Brown Woolen Mills will soon be reopened by H. Lamm Gray who has purchased the property.

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50 parachutes a week a year ago has been raised to 500. The

company plans to increase its floor space from 15,000 to 45,000

square feet, and its employment from 250 to 300 hands.

Middletown: Andover Kent, Inc., has taken over the local factory to Remington-Rand, idle since last May, to make munitions.

Milford: Nearly 300 men and women will be employed at the new \$400,000 plant of the United States Electrical Motors, Inc., now being built. The factory will be the largest in Milford.

Naugatuck: Construction of a \$1,250,000 synthetic rubber factory will be started soon by the United States Rubber Company. Its capacity will be 2,500 tons of synthetic rubber a year, which can be quickly increased to 10,000 tons. The Federal Loan Administration is providing funds.

Pawcatuck: The plant of the Hamilton Standard Propeller Division of United Aircraft corporation is expected to be in full operation by June or July, 1941. Its payroll at capacity is expected to reach \$40,000 and employment, now about 110 to reach 1,000.

Waterbury: Henco Silks, Inc., recently organized with capital of \$25,000 plan to operate a mill here.

Changes in 24 Leading New England Manufactures, 1904 to 1914
and 1914 to 1925

	Value added by manufacture		1914 percent-	
	New England	Entire United States	age of 1904 and 1925 as of 1914 N.E.	U.S.
Cotton goods	\$88,169,000	\$160,404,000		
1904	130,175,000	244,967,000	147.6	152.7
1914	251,015,000	637,215,000	192.8	260.1
1925				
Boots and shoes				
1914	67,500,000	122,744,000		
1914	100,216,000	191,404,000	148.5	155.9
1925	165,467,000	443,751,000	161.2	231.8
Electrical Machines				
1904	12,224,000	73,972,000		
1914	34,928,000	180,442,000	285.7	243.9
1925	153,446,000	903,310,000	439.3	500.6
Worsted goods				
1904	35,612,000	56,087,000		
1914	58,570,000	92,868,000	164.5	165.6
1925	133,122,000	195,483,000	227.3	210.5
Foundry and machine-shop				
1904	63,868,000	407,827,000		
1914	117,574,000	508,423,000	184.1	124.7
1925	132,938,000	1,349,278,000	113.1	265.4
Paper and wood pulp				
1904	30,343,000	77,464,000		
1914	40,368,000	118,966,000	133.0	153.6
1925	98,817,000	366,022,000	244.8	307.7
Woolen goods				
1904	35,807,000	54,366,000		
1914	24,618,000	40,120,000	68.8	73.8
1925	91,170,000	141,906,000	370.3	353.7
Printing and Publishing				
1904	20,962,000	238,970,000		
1914	26,114,000	366,824,000	124.6	153.5
1925	71,765,000	1,068,121,000	274.8	291.2
Rubber goods				
1904	9,739,000	29,948,000		
1914	15,439,000	108,093,000	158.5	360.9
1925	64,463,000	461,205,000	417.5	426.7

Artman, Charles, Industrial Structure of New England, p.175-176

Changes in 24 Leading New England Manufactures, 1904 to 1914
and 1914 to 1925 -- Continued

	Value added by manufacture		1914 percent-	
	New England	Entire United States	age of 1904 and 1925 as of 1914 N.E.	U.S.
Hardware, not classed elsewhere				
1904	\$15,631,000	\$ 32,k30,000		
1914	21,035,000	46,499,000	134.6	144.7
1925	62,781,000	147,550,000	298.5	317.3
Dyeing and finishing textiles				
1904	15,096,000	31,228,000		
1914	21,051,000	52,586,000	132.8	168.4
1925	62,699,000	187,837,000	297.8	357.2
Brass, bronze, copper and other nonferrous				
1904	18,450,000	37,291,000		
1914	18,170,000	47,244,000	98.5	126.7
1925	59,719,000	182,084,000	328.7	385.4
Silk Manufactures				
1904	10,241,000	57,427,000		
1914	19,239,000	109,569,000	187.9	190.8
1925	54,941,000	324,857,000	285.6	296.5
Printing and Publishing book and job				
1904	12,228,000	130,037,000		
1914	19,715,000	210,878,000	161.2	162.2
1925	54,606,000	578,198,000	277.0	274.2
Textile machinery				
1904	(b)	(b)		
1914	(b)	(b)		
1925	53,747,000	82,617,000		
Boots and shoes, rubber				
1904	30,378,000	38,065,000		
1914	13,334,000	29,866,000	43.9	78.5
1925	51,773,000	75,368,000	388.3	252.4
Bakery products				
1904	12,876,000	113,610,000		
1914	22,426,000	217,636,000	178.2	191.6
1925	48,775,000	600,178,000	217.5	275.8

(b) Not segregated

Changes in 24 Leading New England Manufactures, 1904 to 1914
and 1914 to 1925 -- Concluded

	Value added by manufacture		1914 percent-	
	New England	Entire United States	age of 1904 and 1925 as of 1914 N.E.	U.S.
Gas, Manufactured				
1904	\$ 8,472,000	\$ 87,965,000		
1914	15,863,000	143,459,000	187.2	163.1
1925	36,992,000	277,037,000	233.2	193.1
Knit goods				
1904	11,319,000	59,964,000		
1914	15,162,000	112,225,000	134.0	187.2
1925	33,149,000	356,034,000	218.6	317.2
Cutlery and edge tools				
1904	6,114,000	12,587,000		
1914	8,501,000	17,355,000	139.0	137.9
1925	33,064,000	59,701,000	389.0	344.0
Leather, tanned, curried, finished				
1904	11,674,000	61,442,000		
1914	13,313,000	82,956,000	114.0	135.0
1925	31,041,000	155,380,000	233.2	187.3
Jewelry				
1904	14,183,000	29,048,000		
1914	18,029,000	41,890,000	127.1	144.2
1925	30,313,000	86,931,000	168.1	207.5
Metal-working machinery				
1904	(b)	(b)		
1914	(b)	(b)		
1925	28,445,000	121,068,000		
Confectionery				
1904	4,528,000	38,277,000		
1914	8,915,000	69,830,000	196.9	182.4
1925	25,147,000	203,519,000	279.7	291.4

(b) Not segregated

(b) Not segregated

1925	23,147,000	203,319,000	273.7	192.4
1914	8,913,000	63,830,000	196.9	192.4
1904	4,528,000	38,277,000		

Construction

1925	28,442,000	121,068,000
1914	(b)	(b)
1904	(b)	(b)

Metal-working machinery

1925	30,313,000	66,931,000	168.1	207.3
1914	18,023,000	41,690,000	127.1	144.3
1904	14,168,000	39,048,000		

Jewelry

1925	31,041,000	155,380,000	233.3	187.3
1914	13,313,000	62,966,000	114.0	135.0
1904	11,674,000	61,442,000		

Knit goods

Leather, tanned, cut-

1925	33,064,000	69,701,000	269.0	344.0
1914	8,801,000	17,356,000	139.0	137.9
1904	6,114,000	12,387,000		

Cutlery and edge tools

1925	33,149,000	356,034,000	318.6	317.3
1914	15,162,000	112,325,000	134.0	187.3
1904	11,319,000	59,964,000		

Knit goods

1925	36,992,000	277,037,000	233.3	193.1
1914	15,353,000	143,459,000	187.3	163.1
1904	8,472,000	57,865,000		

Gas, manufactured

New England Native United States
1925 as of 1914
1914 percentage
Value added by manufacture
and 1914 to 1925 -- Continued
Changes in 24 leading New England Manufactures, 1904 to 1914

NEW ENGLAND'S SHARE OF SELECTED INDUSTRIES

(Based upon value added by manufacture, 1940..)

From NEW ENGLAND'S RECORD, published by New England Council, 1941

22 Items of which New England produces over 20% of Total Output.

69% of the Firearms

62% of the Wool and Hair Manufactures

62% of the Cotton Narrow Goods

56% of the Boot and Shoe Findings

52% of the Textile Machinery

49% of the Silverware and Plateware

43% of the Non-Ferrous Metals except Aluminum

43% of the Cutlery

39% of the Jewelry

35% of the Clocks

34% of the Boots and Shoes (other than rubber)

30% of the Hats (except cloth)

25% of the Blacking, Stains and Dressing

24% of the Hardware

24% of the Needles, Pins

24% of the Sporting Goods (other than firearms)

23% of the Men's, Boys' Clothing

23% of the Tools (not including edge tools)

22% of the Cotton Manufactures

22% of the Marble, Slate, and Granite

20% of the Wire

20% of the Paper

NEW ENGLAND'S SHARE OF SELECTED INDUSTRIES

(Based upon value added by manufacturers, 1940..)
 From NEW ENGLAND'S RECORD, published by New England Council, 1941
 32 items of which New England produces over 50% of Total Output.

69% of the Firearms
82% of the Wool and Hair Manufacturers
82% of the Cotton Hosiery Goods
85% of the Boot and Shoe Findings
85% of the Textile Machinery
85% of the Silverware and Placware
85% of the Non-Ferrous Metals except Aluminum
85% of the Jewelry
85% of the Jewelry
85% of the Clocks
85% of the Boots and Shoes (other than rubber)
85% of the Hats (except cloth)
85% of the Blacking, Stains and Dressing
85% of the Hardware
85% of the Needles, Pins
85% of the Sporting Goods (other than firearms)
85% of the Men's, Boys' Clothing
85% of the Tools (not including edge tools)
85% of the Cotton Manufacturers
85% of the Marble, Slate, and Granite
85% of the Wire
85% of the Paper

New England's Manufacturing Income

New England receives eight per cent of the total accountable income of the United States. Of this sum, eighty per cent is derived from productive activity, of which one-third comes from manufacturing.

The accompanying chart on the following page, taken from New England Trends, tells the story of the income from manufacturing activities in this section. During the past years there is indicated a gradual upward trend which became definitely pronounced during 1914 and continued during the 1920's. The sharp decline in the thirties is not truly indicative of salary trends owing to a decided change in the price level. When adjustments for these price changes are made, the 1937 level is actually higher than it would have been had the same rate of growth for the eighty-five years prior to the World War continued. In that year the per capita income was \$289 as compared with \$195 for the country at large. (1) This means that in 1937 New England was actually turning out more manufactured goods than she would have if the same rate of growth for the sixty-five years prior to the World War had continued. This is due to the greater variety of products now

First National Bank, New England Trends, p. 27

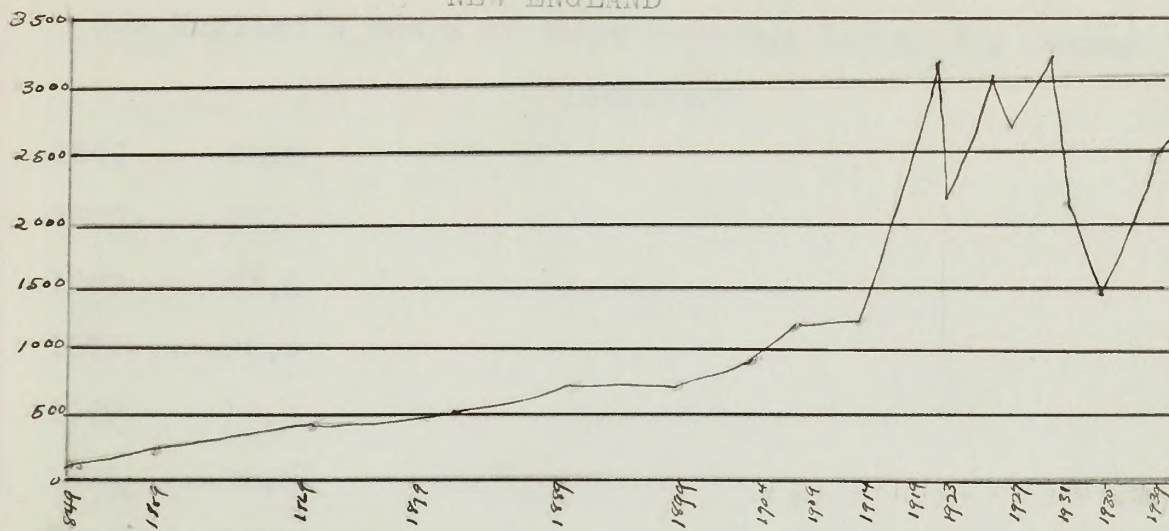
needed to provide for present-day requirements which include as necessities or semi-necessaries many products which were either luxuries or did not exist at all two or three decades ago.

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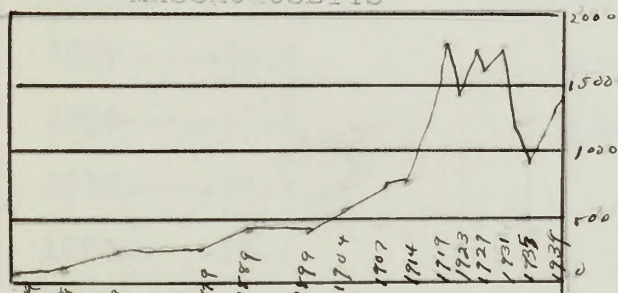
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MANUFACTURING INCOME
(In millions of dollars)
Value added by manufacture

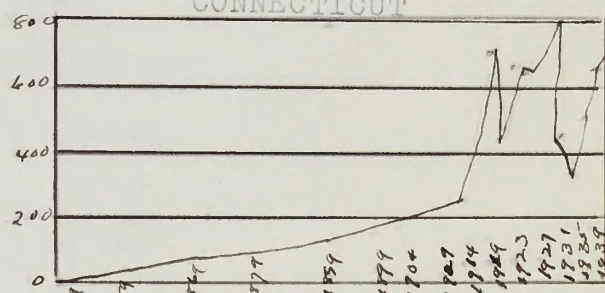
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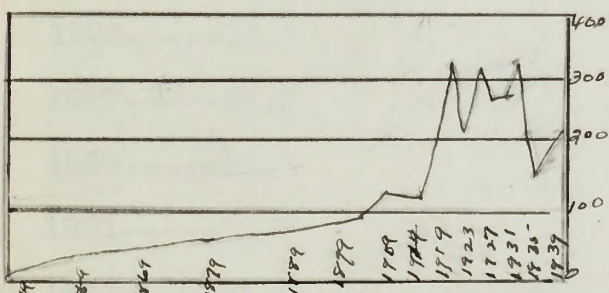
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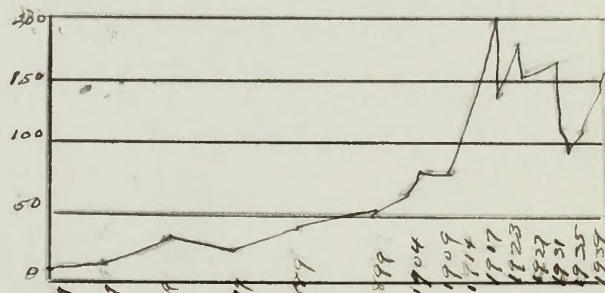
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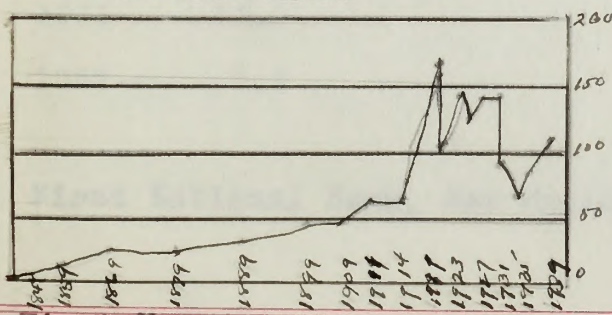
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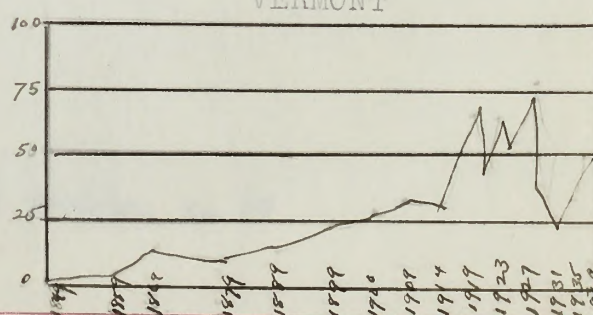
MAINE



NEW HAMPSHIRE



VERMONT



New England's Share of Manufacturing Income for Census Years
1849-1937

1849 ----28.0

1859-----26.1

1869-----23.2

1879-----22.6

1889-----16.8

1899-----15.6

1904-----14.7

Per cent

1909-----14.2

New England of

1914-----13.4

United States

1919-----13.4

1921-----13.4

1923-----12.4

1925-----11.2

1927-----11.0

1929-----10.3

1931-----10.7

1933-----11.2

1935-----10.2

1937----- 9.9

Defense Industries

Superimposed on the manufacturing industries of New England during the present national emergency are the defense industries allotted to this section. Important and difficult tasks have been assigned to its industries, shipyards, and other agencies of production. It is becoming the scene of important naval and military preparations as well as the source of essential tools, munitions, and equipment. Even the research laboratories and educational institutions for which New England is famous are being looked to in Washington for important contributions to national defense.

In order to accomplish all that is required, the organizing and directing force behind national defense production is of great import. Fortunately New England, as nowhere else, has at hand the means for achieving unity of purpose and action. Each year since, 1925, the New England Conference has brought together for two days, the leaders of New England industry, commerce, and government in what has been called "The Town Meeting of New England Business."

In May of this year, New England had five defense co-ordinators: Co-ordinator of Defense Contracts under Office of the Production Management, Albert M. Creighton, Federal Reserve Bank, Boston; Co-ordinator of Defense Problems relating to Health, Recreation and Morale, under the Office of

Social Security, John F. Hardy, Social Security Board, 120 Boylston Street, Boston; Coordinator of Defense Training Within-Industry, under Office of Production Management (For Maine, New Hampshire, Vermont, and Massachusetts), Clarence G. McDavitt, Room 526, 120 Boylston Street, Boston; (for Rhode Island and Connecticut) Ernest Stowell, Underwood Elliott Fisher Company, 555 Capital Avenue, Hartford, Connecticut; Coordinator of Defense, Division of State and Local Cooperation, under Frank Bane and Office for Emergency Management, John W. Farley, State House, Boston. In addition to the coordinators, each state has appointed defense commissions which will assure complete cooperation in the national defense program.

Part of the preparatory work accomplished by August of 1940 included the following:

1. During July and August the most complete analysis ever undertaken of New England's industrial facilities has been completed and made available to state and federal authorities.
2. Connecticut's Council of National Defense recently mailed questionnaires to 3,000 manufacturing concerns throughout the state, the answers to which will constitute a complete inventory of its industrial facilities.
3. In Rhode Island, the Industrial Development Commission has inventoried the state's facilities for subsidiary aircraft manufacture, listed all products now made in the state,

And furnished its manufacturers with a complete directory of the country's manufacturers of airplanes and engines and of aircraft and engine accessories.

4. Another new directory, which will assist those interested in purchases for defense purposes, has been issued by the New Hampshire Planning and Development Commission. More than 900 products produced by 800 manufacturing plants are listed by product, by name of firm, and by geographical location.

5. Maine's Military Defense Commission is supervising the expenditure of a two million bond issue recently authorized by the legislature for military reinforcements. The program calls for construction of state armories and the improvement of airports.

6. The Industrial Engineer of the Maine Development Commission recently made a survey of commercial airplane factories to determine what parts might be manufactured in Maine's small plants. Maine's industrial products and facilities have also been listed.

7. A survey by the Rhode Island Textile Association showed that the Rhode Island textile industry is fully prepared to cooperate with the federal government in the national defense program.

8. Plans to set up a food preparedness council for Maine as part of the national preparedness program were announced recently by directors of the Portland Retail Grocers and

Food Dealers Association. Data on production, processing and distribution of food stuffs in Maine is now being gathered.

9. A Massachusetts Farmers Defense Board has been created to safeguard the state's farmers against war emergencies.

Charles B. Jordan of Holden, president of the Massachusetts Farm Bureau Federation, is chairman.

10. The Associated Industries of Massachusetts, in cooperation with the Massachusetts Aeronautics Commission, has announced that 131 factories in the state are now producing tools, parts, materials and accessories for the aircraft industry and 250 other firms are capable and willing to do aircraft work.

New England--No. 1 Defense Area

At the Second Annual Aviation Conference of New England, held in Boston during June of this year under the sponsorship of the six New England Governors and more than forty New England business organizations, the following points which pointed to New England as our country's number one strategic area were made: (1)

1. The defense of New England depends upon the ability of the Army and Navy air arms to hold a front line hundreds, perhaps thousands, of miles at sea.

2. New England machine tools are the key to American aircraft production.

..... 3. New England has already put to work more die and

(1) New England Council's News Letter, June, 1941. p. 3

tool makers than any other section of the country.

4. It has the largest single aircraft engine plant in America and the largest proportionate production of aircraft engines and propellers.

5. New England-trained men are to be found in every part of the air-craft industry in every section of the country.

6. Thousands more--engineers, skilled mechanics, and aircraft maintenance men--are being trained here now under the federal emergency program. But the supply is still short, in short, in some cases by as much as 90 per cent.

7. War-born machine tool plants in the Middle West are creating competition for New England.

8. This section will soon have more adequate airports for commercial and military purposes than any like area in the country.

9. Although New England is in a "corner" with respect to domestic air lanes, it is favorably situated for trans-Atlantic air commerce and the commercial lines have it very much in mind.

Mr. Crocker Snow, Massachusetts aeronautics director and chairman of the Conference declared: "We know that large scale production of aircraft is almost completely dependent upon adequate supplies of machine tools, fine measuring

instruments, and skilled workmen. New England has always had an abundance of facilities for producing all of these; facilities which are now being used to many times their normal capacity; and our universities are training engineers and research experts capable of ever increasing the quality of what we produce, both in men and machines. " (1)

Defense Contracts

New England has received primary Army and Navy defense contracts totaling \$1,750,974,177 between June 12, 1940 and April 30, 1941, according to tabulations recently completed by the New England Council's Statistical Department. These contracts represent more than 13 per cent of the total for the country. Under these contracts this region has agreed to provide:

\$980,203,326 worth of ships

\$198,853,860 worth of air planes and airplane parts

\$135,408,480 worth of new plant and base facilities

\$ 97,569,062 worth of ammunition and chemical supplies

\$ 32,258,429 worth of uniform cloth

\$ 27,471,039 worth of guns, rifles, machine guns, and
small arms

\$ 17,156,287 worth of shoes

\$262,053,748 worth of miscellaneous defense items.

Under these contracts New England is supplying 19 per cent of the country's ships, 10 per cent of all equipment and

.....
(1) New England Council's News Letter, June, 1941, p. 3

ordnance, 8 per cent of all airplanes and airplane parts, and 7 per cent of all construction. This section's normal production as measured by its dollar value is 8.8 per cent of the United States total.

Mr. Ralph E. Flanders, president of the New England Council, says that this figure for prime defense contracts represents only a fraction of the area's contribution to defense work. There is no way of estimating the amount of subcontracting which is going on here, and we have no way of knowing the volume of New England production which contributes to defense without having the defense label. He went on to say that New England business index has risen 35 per cent in the past twelve months. yet if all the prime defense orders placed here during the period were already completed--and if they were all in addition to normal orders, causing no displacements--they would account for only a 34 per cent increase in terms of product value. (1)

Mr. Russell Cort, Boston marketing expert, has estimated that of the \$1,750,974,177 prime defense contracts some \$719,023,790 will be spent on wages and salaries. That would represent about 41 per cent.

(1) New England Council's News Letter, June, 1941, p.4

REGIONAL SUMMARY OF ARMY AND NAVY CONTRACTS

IN

NEW ENGLAND.

(By commodity classification)

New England

Ships and Airplanes	\$1,186,012,004
Construction	135,408,480
Machinery (except electrical)	102,032,557
Chemicals	97,569,062
Iron and Steel (except machinery)	82,045,539
Textile-mill and fiber	59,399,082
Nonferrous metals	22,793,495
Apparel	20,635,257
Leather	20,063,877
Electrical machinery	12,849,875
Miscellaneous	5,555,684
Rubber	3,501,036
Petroleum and coal	1,090,670
Automobiles and auto equipment	959,446
Stone, clay, and glass	451,093
Furniture	229,411
Food	140,806
Paper	132,139
Lumber and timber	104,664
TOTAL	\$1,750,974,177

All tabulations by the New England Council's Statistical Department.

REGIONAL SUMMARY OF ARMY AND NAVY CONTRACTS

in

New England
(By commodity classification)

Maine

Ships and Airplanes	\$165,408,682
Construction	4,875,179
Textile-mill products	3,326,584
Apparel	816,825
Leather products	784,948
Iron and steel (except machinery)	396,777
Machinery (except electrical)	161,080
Miscellaneous	38,983
Food	15,821
Lumber products	8,074

TOTAL	\$175,832,953
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New Hampshire

Ships and Airplanes	\$ 80,415,000
Construction	8,735,302
Textile-mill products	2,694,293
Apparel	2,015,410
Leather products	1,797,295
Machinery (except electrical)	316,399
Furniture	79,196
Miscellaneous	33,178

TOTAL	\$ 96,086,073
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Vermont

Construction	\$ 968,257
Machinery (except electrical)	778,725
Textile-mill products	104,580
Apparel	81,820
Furniture	56,994
Miscellaneous	41,101
Iron and steel (except machinery)	8,971

TOTAL	\$ 2,040,448
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REGIONAL SUMMARY OF ARMY AND NAVY CONTRACTS

in

New England.

(By commodity classification)

Massachusetts

Ships and Airplanes	\$701,755,478
Construction	44,102,384
Textile-mill products	35,370,553
Iron and steel (except machinery)	20,427,265
Leather products	17,410,293
Apparel	12,992,484
Electrical machinery	5,484,947
Machinery (except electrical)	4,439,919
Miscellaneous	4,407,658
Rubber	2,610,012
Chemical products	1,107,197
Automobiles and equipment	959,446
Nonferrous metals	926,206
Petroleum and coal	807,155
Stone, clay, and glass products	419,382
Paper	132,139
Food	124,985
Lumber products	96,590
Furniture	89,451

TOTAL	\$853,663,544
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REGIONAL SUMMARY OF ARMY AND NAVY CONSTRUCTS

in

New England

Rhode Island.

Construction	\$ 34,278,884
Textile-mill products	13,358,976
Electrical machinery	4,337,173
Machinery (except electrical)	1,899,819
Apparel	1,196,296
Iron and steel (except machinery)	788,083
Ships and airplanes	304,000
Rubber	146,313
Miscellaneous	139,926
Nonferrous metals	70,213
Leather products	51,820
Chemical products	12,591
Stone, clay, and glass products	5,175

TOTAL	\$ 56,589,269
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Connecticut.

Ships and airplanes	\$238,128,844
Chemical products	96,449,274
Machinery (except electrical)	94,436,615
Iron and steel (except machinery)	60,424,443
Construction	42,448,474
Nonferrous metals	21,797,076
Textile-mill products	4,544,096
Apparel	3,532,422
Electrical machinery	3,027,755
Miscellaneous	894,838
Rubber	744,711
Petroleum and coal	283,515
Stone, clay, and glass products	26,536
Leather products	19,521
Furniture	3,770

TOTAL	\$566,761,890
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NEW ENGLAND YARDS TO BUILD 199 WAR VESSELS, (As of Mar. 31, 1941)

PRIVATE SHIPYARDS	Type Vessels	No.	Value
Bath Iron Works Bath, Maine	Destroyers,	30	\$ 180,101,200
Bethlehem Steel Co. Quincy, Mass.	Cargo Cargo, Cruisers etc. *	26	592,187,000
Bristol Yacht Bldg. Co. South Bristol, Maine	Minesweepers	2	300,000
Electric Boat Co. Groton, Conn.	Submarines	45	125,939,000
Herreshoff Mfg. Co. Bristol, R. I.	Minesweepers	2	304,000
Geo. Lawley & Sons Corp. Neponset, Mass.	Sub Chasers	10	4,500,000
Luders Marine Constr. Co. Stamford, Conn.	Sub Chasers	5	2,188,000
Rice Brothers Corp. East Boothbay, Maine	Sub Chasers	2	272,800
W. A. Robinson, Inc. Ipswich, Mass.	Minesweepers	4	632,000
Snow Shipyards, Inc. Rockland, Maine	Minesweepers	4	600,000
Todd-Bath Iron Works So. Portland, Maine	Cargo	30	48,000,000
	Total	160	955,024,000

U. S. NAVY YARDS

Boston Navy Yard Boston, Mass.	Destroyers, Sea- plane Tenders	22	130,353,465
Portsmouth Navy Yard Portsmouth, N. H.	Submarines	17	70,732,000
	Total	39	\$201,085,465

Grand Total 199 \$1,156,109,465

* Also Battleship, Destroyers, and Aircraft Carrier

Above data is for vessels under construction under contract as of March 31, 1941. (Does not include those already completed)

NEW ENGLAND YARDS TO BUILD TWO WAR VESSELS (As of Mar. 31, 1941)

PRIVATE SHIPYARDS			
Type Vessels	No.	Value	
Bath Iron Works			
Bath, Maine			
Bethlehem Steel Co.			
Bethlehem Steel Co.			
Guinay, Mass.			
Bristol Yacht Bldg. Co.			
South Bristol, Maine			
Kiester Boat Co.			
Keaton, Conn.			
Herrshoff Mfg. Co.			
Bristol, R. I.			
Geo. Lawley & Sons Corp.			
Weymouth, Mass.			
Indiana Marine Constr. Co.			
Stamford, Conn.			
Rice Brothers Corp.			
East Boothbay, Maine			
W. A. Robinson, Inc.			
Yonkers, Mass.			
Snow Shipyards, Inc.			
Rockland, Maine			
Todd-Bath Iron Works			
So. Portland, Maine			
Total	120	\$53,024,000	
U. S. NAVY YARDS			
Boston Navy Yard			
Boston, Mass.			
Portsmouth Navy Yard			
Portsmouth, N. H.			
Total	30	\$30,000,000	
Grand Total	150	\$83,024,000	

* Also Battleship, Destroyers, and Aircraft Carrier

Above data is for vessels under construction under contract as of March 31, 1941. (Does not include those already completed)

DEFENSE CONTRACTS LET IN NEW ENGLAND, as of April, 1941

	Army Contracts (1)	Navy Contracts (2) (3)	All Other Defense (4)	Totals (5)
Maine	\$6,271,359	\$ 167,306,862	\$ 5,120,641	\$ 178,698,862
New Hampshire	6,026,900	88,253,027	2,097,276	96,377,203
Vermont	1,640,497	165,700	489,422	2,295,619
Massachusetts	88,792,124	728,713,558	14,638,302	832,143,984
Rhode Island	10,643,535	35,143,256	1,754,491	47,541,282
Connecticut	189,620,359	340,616,853	8,349,208	538,586,420
New England	302,994,774	1,360,199,256	32,449,340	1,695,643,370

-
- (1) Includes all Army contracts
(2) Includes all Navy contracts over \$5000 except
a. Contracts not made public
b. Agreements cleared by NADC but contract not yet signed
c. Orders placed with Army & Navy ordnance, arsenals, and supply depots.
- (3) Includes reported costs of 58 naval vessels contracted for September 9.
- (4) Figures from July first only.
- (5) Does not include contracts awarded to New England firms with selling agencies outside of New England.

DEFENSE CONTRACTS LIST IN NEW ENGLAND, as of April, 1941

	Army Contracts (1)	Navy Contracts (2)	All Other Defense (4)	Totals (3)
Maine	\$6,271,353	\$ 187,308,863	\$ 5,180,641	\$ 178,668,663
New Hampshire	6,026,900	88,323,027	2,097,376	86,377,203
Vermont	1,640,437	163,700	489,423	2,293,619
Massachusetts	88,792,124	728,713,858	14,638,302	832,143,984
Rhode Island	10,643,632	35,143,256	1,784,491	47,541,283
Connecticut	189,620,259	340,616,823	8,349,208	538,586,430
New England	302,994,774	1,360,192,238	32,449,340	1,693,643,370

- (1) Includes all Army contracts
(2) Includes all Navy contracts over \$5000 except
a. Contracts not made public
b. Agreements cleared by NADG but contract not yet signed
c. Orders placed with Army & Navy Ordnance, Arsenal, and supply depots.
(3) Does not include contracts awarded to New England firms with selling agencies outside of New England.
(4) Figures from July first only.
(5) Includes reported costs of 58 naval vessels contracted for September 2.

DEFENSE HOUSING PROJECTS IN NEW ENGLAND

National Defense Program--June 12, 1940--April 30, 1941

Type	Location	Agency	Amount
<u>Rhode Island</u>			
Barracks and	Nava l Training Sta.	Navy	\$ 400,000
Mess Hall	Newport		455,000
Temporary Construction	Newport	"	
and Facilities	Harbor Defense,	Army	336,266
Temporary Housing	Narragansett Bay		
Extension of Barracks	Naval Torpedo Sta.	Navy	135,000
	Newport		
2262 Dwellings--Loan	Naval Station	USHA	945,975
	Newport		
Housing Facilities	Newport	Navy	1,655,000
236 Housing Units	Quonset Point	"	667,000
Temporary Housing	Fort Gette, Adams,	Army	
	Kearney & Wetherill		
	(Harbor Defenses,		
	Narragansett Bay)		747,680
262 Dwelling Units	Quonset Point	USHA	
538 Dwelling Units	Newport	"	1,496,000
	Total.....		<u>7,557,921</u>

Connecticut

Housing Facilities	Submarine Base,	Navy	\$ 277,000
	New London		
Housing & Training	Univ. of Conn, Flying	WPA	35,024
Facilities	Field, Willimantic		
1000 Dwelling Units	Hartford	USHA	3,597,000
300 Dwelling Units	New London	PBA-FWA	933,000
6 Dormitories	New London	FSA	111,600
300 Dwelling Units	New Britain	USHA	923,700
	Total.....		<u>\$ 5,877,324</u>

NEW ENGLAND TOTAL.....\$23,499,295

CONCLUSION

New England has been able to maintain a sound industrial structure against great odds during the past few years, and her business activity is proceeding at new high levels. Research is being conducted into the fields of agriculture, forestry, mineral assets, and fisheries. Careful study is being made of conditions in the manufacture of defense products and those which are non-defense, to the end that adjustment may be adequately made when expenditures for defense begin to decline. This will mean a shift from production for defense to production for peace-time needs of some five millions of workers throughout the country.

In a statement recently issued by the National Association of Manufacturers, Dr. Karl T. Compton, president of Massachusetts Institute of Technology, and chairman of the New England Council's New Products Committee, declared: "Industry now is in operation at new high levels. Plant expansions are common and capacity production is the rule. But the prosperity which the production of armaments seems to produce is only a pseudo-prosperity. Guns and planes and tanks, although essential now to national safety, are not wealth-creating machines.

"National defense orders are only a stimulant injected into industry's bloodstream, and the effects of the stimulant will wear off. We must prepare now for the time when the government ceases to order large quantities of armaments. We

must originate now the products and processes which will keep our assembly lines busy after this emergency.

"It is always important for industry to engage in research, but expansion of industrial research today, and in the months ahead, is imperative if America is to be assured of supremacy in national defense and if it is to maintain and improve the American standard of living.

"By research today we can assure prosperity tomorrow. We can bring forth new goods, new services, new industries and new jobs, and do much to prevent the recurrence of such economic dislocation as followed 1917-1918." (1)

Just how good New England's industrial future will be depends upon New Englanders themselves, for the region's geographical location is no bar to its continued prosperity. It has great factories already built and splendidly equipped; it has unequalled executive ability; it has craftsmen developed to a skill greater than that of any other section.

Whatever its deficiencies may be, they can be used to inspire more effort in the building up of the industrial assets inherited. A large portion of the seven million New Englanders depend for their livelihood on the prosperity of manufactures. When these cease to thrive, the region will decline. New England's industrial history of the past few years does not indicate such a future is in store.

.....

(1) New England Council's News Letter, January, 1941, p. 5

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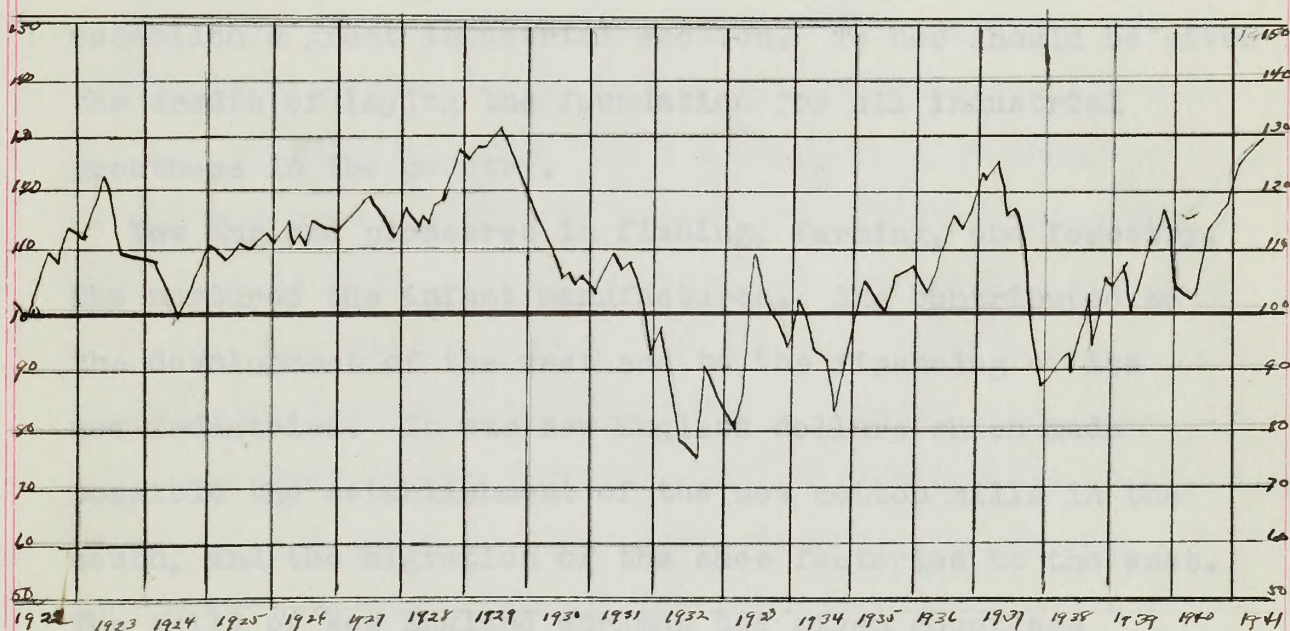
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That now New England's industrial future will be
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INDEX OF GENERAL BUSINESS ACTIVITY IN NEW ENGLAND



11?

DIGEST

New England has played a most important rôle in the industrial life of the nation, and there is every indication that she will continue to do so. In reviewing her past achievements, one realizes she has done more than merely establish a great industrial section. To her should be given the credit of laying the foundation for all industrial greatness in the country.

New England pioneered in fishing, farming, and forestry. She nurtured the infant manufactures. She contributed to the development of the west and to the financing of its new industries. It was New England dollars which made possible the establishment of the new cotton mills in the south, and the migration of the shoe factories to the west. The skill of New England workmen has given countless inventions of machines and devices which have contributed to the advance of industry in all sections of the country.

These achievements were made possible because of the outstanding character of New Englanders--their resourcefulness, their ingenuity, their courage and willingness to work. These same characteristics continue to dominate our people and make possible the overcoming of whatever obstacles come across to success.

A systematic study of existing conditions prove that, in spite of prevailing opinion, New England industry is not on the way out. On the contrary, it seems to be advancing to new high levels.

In the natural product activities, New England's outlook is most favorable. Farm income has increased 20 million dollars in the last ten years. Forest lands are definitely on the increase. Scientific investigation is being made in the fields of agriculture, forestry, mineralogy and fisheries to help stimulate productivity and safeguard the future of those industries. Since the recent call to importance of many new minerals, several committees investigating are convinced that real opportunities exist in the present undeveloped mineral districts of New England.

In the field of manufactures, diversification has become the watchword of New England prosperity. In the past few years, since the migration of textiles and shoes, hundreds of new industries have moved in to take their place. New England leadership is already assured in many of these diversified lines due to the resourcefulness and adaptability of its people. Although New England no longer depends upon textiles and shoes for its livelihood; nevertheless, according to the latest statistical data, New England is producing 62% of the wool and hair manufactures, 62% of the cotton narrow goods, 22% of the cotton, 23% of the men's and boys' clothing, and 34% of the boots and shoes of the nation.

For some years past, the metal industries have been leading all others in New England. The percentage of national output is indicated in the following selected from the 1940 Census Report: 69 per cent of the firearms; 62 per cent of the textile machinery, 49 per cent of the silverware and plateware; 43 per cent of the non-ferrous metals except aluminum; 43 per cent of the cutlery; 39 per cent of the jewelry; 35 per cent of the clocks; 24 per cent of the hardware; 24 per cent of the needles and pins; 24 per cent of the sporting goods other than firearms; 23 per cent of the tools not including the edge tools; 20 per cent of the wire.

Finally, the nation at large has expressed its confidence in New England by turning over to its workers defense contracts amounting to \$1,750,974,177 or about 15 per cent of the total. To the end that these contracts may be filled with the greatest efficiency and without delay, each state has appointed its own defense commission which works with the five defense coordinators in New England. Through their united efforts, various surveys are being conducted, data collected, plans set up, to the end that New England may best serve the country's defense needs.

BIBLIOGRAPHY

- Artman, Charles, Industrial Structure of New England
U. S. Department of Commerce, Bureau of
Foreign and Domestic Commerce, Washington
1929
- Bogart, Ernest, Economic History of U. S.
Longman's Green & Co., New York 1908
- Cole, Arthur H., The American Wool Manufactures.
Harvard University Press. 1926
- Copeland, M. T., Cotton Manufactures in United States
Harvard University Press. 1923
- Clark, Victor Selden, History of Manufactures in United States
1607-1860. Volumes 1, 2, 3.
McGraw-Hill Book Co., New York. 1929
- Chamber of Commerce, The Shoe Manufacturing Industry of
New England. Chamber of Commerce, Boston,
Mass. 1941
- Davis, William, New England States. Volume 1.
D. H. Hurd Company, Boston, mass. 1897
- Dame, Lawrence, New England Comes Back. Rand House, New York
1940
- Doane, Warren, Flight of Capital and Industry from Mass-
achusetts. Philadelphia Manufacturers Assoc.
1941
- French, George, New England.
Boston Chamber of Commerce
Boston, Mass., 1911
- Greeley, Horace, Great Industries of United States
J. B. Burr and Hyde, Hartford, Conn. 1872
- Leander. Bishop J., History of American Manufactures,
1808-1860. Volume 1. E. Young & Co.,
Philadelphia, Pa. 1868

BIBLIOGRAPHY

Lippencott, Isaac, Economic Development of the United States
D. Appleton & Co., New York, 1923

Mitchell, George, Industrial Revolution in the South
John Hopkins Press. Baltimore, Md. 1930

Weeden, William, Economic and Social History of New England.
Volumes 1, 2. Houghton Mifflin Co.,
Boston, Mass. 1890

Reports and Statistics

First National Bank, New England Trends, 1939 (Booklet)

First National Bank, New England Trends, Monthly Pamphlets for 1940 and 1941.

New England Council, New England Bank Management Conference Reports.

Effect of Defense Production in New England

Man Power, Labor Supply and Training in Defense Production. 1940

New England's Record, Facts You Ought to Know and Tell Others. 1940

U. S. Department of Commerce, Bureau of the Census.
Census Report of Manufactures, 1937
Summary by Industries for all New England States.

U. S. Department of Commerce, Bureau of Statistics
History of Wages in U. S. from Colonial Times to 1928.

Statistical Abstract of the United States, 1937

Statistical Abstract of the United States, 1940

U. S. Department of Labor and Industries,
Facts Concerning Industrial Advantages in Massachusetts. 1941

Other Sources of Information

Hamilton, Alexander, Report of Manufactures, Dec. 5, 1790.
(State Papers) W. Brown, Philadelphia,
1827.

Keir, Malcolm, Professor at Dartmouth College,
Address to New England Business Men
and Industrialists, 52th Quarterly
Meeting, Boston, Mass.

Richerford, Colonel H. K., Director of Planning Board of
United States War Department,
Address at 59th Quarterly Meeting of
New England Council, 1940.

Roosevelt, President Franklin D., Letter to Ralph E. Flanders
November 14, 1940.

Smith, Harold Ladd, Chairman of Mineral Resources,
Address before American Institute of
Mining and Metallurgical Engineers,
New York, 1940.

Wells, R. G. of Boston University,
Report Submitted to Industrial Com-
mittee of the New England Council,
Bureau of Business Research, Boston
University, 1935.

Other Sources of Information

Hamilton, Alexander, Report of Manufacturers, Dec. 2, 1940.
(State Papers) W. Brown, Philadelphia.
1942.

Wells, Malcolm, Professor at Dartmouth College.
Address to the United Nations War
and Industries Conference, 30th January
1942, Boston, Mass.

Richardson, Colonel E. K., Director of Planning Board of
United States War Department.
Address at 30th January meeting of
New England Council, 1940.

Roosevelt, President Franklin D., Letter to Ralph W. Randolph
November 14, 1940.

Smith, Harold Isaac, Chairman of Mineral Resources,
Address before American Institute of
Mining and Metallurgical Engineers,
New York, 1940.

Wells, E. G. of Boston University.
Report submitted to Industrial Com-
mittee of the New England Council,
Bureau of Business Research, Boston
University, 1939.

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